

MANAGING MINE SHUTDOWNS:
THE CASE FOR COMMUNITY PREPAREDNESS PLANNING

by

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ABSTRACT

The purpose of this thesis has been to determine ways of developing a readiness by a dependent mining community for the possibility of temporary shutdown and the inevitability of mine closure. It begins with the premise that while the occurrence of either, in most cases, cannot be prevented, its process can be controlled and its impacts managed if there is adequate preparation. Specifically, the thesis constructs a preparedness planning framework which approaches the need for community preparedness in two ways: 1) short-term strategies to address the immediate needs of the community following the announcement of shutdown or closure; and 2) long-term strategies to prevent, if feasible, the loss of an economic mainstay. Through this, a community is able to address the uncertainty inherent in the mine's life-span and ultimately its own.

The need for a mining community to plan for the loss of its economic mainstay is documented through the case studies of two northern mining communities - Elsa and Faro, in the Yukon Territory - which have recently experienced the indefinite shutdowns of their affiliated mines. Based on interviews with involved parties (the mining company, federal and territorial governments, union and local community officials, and residents), it appeared that very little planning for the possibility of a shutdown had been undertaken. Reasons for this included:

- 1) a lack of recognition of its possible occurrence as well as the extent of community impacts
- 2) uncertainty as to its occurrence and duration

- 3) uncertainty over how to prepare for a shutdown
- 4) uncertainty over roles and responsibilities for such preparedness.

A review of the pertinent literature suggests that such problems are not particular to Elsa and Faro, but rather, are typical in most situations where shutdowns and closures were not planned. In the case studies, this lack of planning has resulted in an ad hoc and crisis-induced approach to a shutdown; an approach which appeared to have exacerbated its social and economic dislocation with delays and confusion over responsibilities and assistance measures.

In developing the conceptual framework for the preparedness planning approach, the thesis draws upon the experiences in the natural disaster field, due to the similarities in dependency and vulnerability which both a mining community and a disaster-prone community share. From disaster planning efforts, three lessons were found to be of fundamental importance to the development of a preparedness planning framework:

- 1) the need to prepare, in advance, short and long-term strategies to assist the community in reducing the resulting social and economic dislocation created by a shutdown;
- 2) the need for a systematic planning process to provide a community with the 'means' to manage and minimize this dislocation;
- 3) the need to integrate community preparedness efforts with national policy planning in order to develop a more comprehensive and co-ordinated approach to the managing the process and consequences of mine shutdown.

For a mining community to be prepared for either a mine shutdown or closure, three sets of alternatives need to be developed:

- response alternatives (that is, who is responsible for what when either actually occurs);
- cyclical shutdown preparation alternatives (for example, the development of make-work projects to offset periods of shutdown); and,
- dependency-reduction alternatives (that is, the development of preventative strategies, if possible, for avoiding dependence on one economic mainstay).

It is proposed that the actual preparedness planning and development of these strategies be done by an inter-sectoral committee comprised of representatives from each of the involved parties in a mining community.

Finally, implementation of the preparedness planning process should be approached in one of two ways. For new projects north of 60° which require the special creation of an affiliated community, requirements for preparedness planning and allocation of responsibilities should be determined before the issuance of a water licence. Such requirements would be similar to those already established for dealing with environmental concerns in mining projects.

For existing mining communities north of 60°, such legal requirements cannot be applied as the mine is already operating. It is therefore suggested that preparedness planning be encouraged by the federal and territorial governments through financial incentives and disincentives.

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CHAPTER ONE

INTRODUCTION

1.1 - The Problem

There is a lack of systematic planning, by many mining-dependent communities, for the possibility of a mine shutdown and the inevitability of its closure. As a result, these communities are unprepared for the occurrence of either as well as the accompanying social and economic dislocation that often precipitates temporary or even permanent community decline.

1.2 - Thesis Objectives

The purpose of this thesis is to develop a preparedness planning process for a mining community to manage a mine shutdown. By preparedness planning is meant the development of a readiness for a shutdown by those involved (company, union, government(s), workers, residents, and private service sector), through the creation of short-term strategies to deal with periods of cyclical shutdown(for example, make-work projects); longer-term strategies to offset (if feasible) the loss of an economic base for the community (for example, economic diversification), and finally, a response framework which outlines who is responsible for what, when either a mine shutdown or permanent closure occurs. The goal, therefore, of preparedness planning, is to reduce both the vulnerability to, and the consequences of, the loss of a mining community's mainstay.

The following objectives have been established for the thesis:

- to document the causes and community consequences of a mine shutdown, using as case studies two Yukon mining communities - Elsa and Faro - which have recently experienced the indefinite shutdown of their affiliated mines (Chapter Two);
- to identify the major substantive and procedural problems created by the current lack of planning by involved actors for the two mine shutdowns in the case studies (Chapter Three);
- to develop a conceptual framework for a preparedness planning approach based, in part, on that used in disaster planning (Chapter Four);
- to outline in more detail this preparedness planning approach as it applies to mining communities (Chapter Five);
- to appraise this preparedness planning approach in terms of its limitations, benefits, and over-all value in reducing the accompanying social and economic dislocation of shutdown (Chapter Six).

1.3 - Characteristics of a Mining Community

The isolated location of most mineral deposits in Canada has, in the past, necessitated the creation of special mining communities to house and service the labour force of a mine for the duration of its operations. The mining community differs

from other communities in several important aspects.

First, it is typically an 'instant' community unlike the majority of other communities in Canada which have 'evolved' over several decades. By 'instant' is meant that not only is the community explicitly created by a mining company or through a joint effort by both company and government, but its development¹ generally occurs within a short time span of one to three years.

Secondly, the mining community is 'planned' in terms of its physical design and population. The design, quality of life, and the recruitment of 'stable' residents for a mining town have, in the past three decades, been considered important components for reducing the typically high population and labour turnover and therefore, have traditionally been the focus of resource community planning. Such planning tends to be done by professional planners without any input by the community's future residents.

A third important characteristic of a mining community is, despite the increased sophistication of its physical structures, its dependency on a single finite economic base. While an economically viable mineral deposit creates the impetus for this type of community, its geographical isolation often precludes other social and economic opportunities and therefore, employment

¹Lucas(1971) outlines four stages in the development of a resource community: construction, recruitment, transition, and maturity. Most planning emphasis has been on various strategies to achieve the 'maturity' stage as quickly as possible.

alternatives for the residents (Robinson, 1963, p.5; Lucas, 1971). Limited transportation linkages, high costs of transporting and producing goods coupled with a lack of local markets restrict local entrepreneurship (Deoux, 1983).

Dependency is the central fact of life for such communities (Himmelfarb, 1976) and affects the social and economic well-being of its residents for, according to Lucas (1971, p.394), "the economic and technical factors that were instrumental in locating and developing communities of single industry are the same factors which rule out additional industry, diversification of the economic base, and expansion of the population." Stelter and Artibise (1982, p.48) suggest that the lack of economic diversification is not necessarily unintentional:

The economic base is controlled by outside corporations or governments who determine the nature and extent of extractive or processing activity and thereby determine the size of the local work force and the degree of local prosperity and growth. Fluctuations between boom and bust depend on the vagaries of the international market in resources or corporate and government decisions, not on local initiative as is often the case with other types of communities...[F]urther, isolation from major markets, relatively high wages paid by resource industries and high development costs combine to prevent the influx of secondary industry."

The fourth, and perhaps most obvious, characteristic of a mining community is its inherent impermanency, created by its economic dependency on a depletable ore body. When an ore body is exhausted, the mining operation is closed permanently, although other economic factors such as loss of markets, rising operating costs per tonne of ore milled, changes in technology

or corporate plans, and the existence of alternative higher grade and more economically viable ore bodies located elsewhere may result in permanent closure before the ore runs out. In addition, a mining community is also vulnerable to periodic downturns in external markets reflected in indefinite or temporary shutdowns of its affiliated mine. Table 1.1 offers a typology of shutdowns and the characteristics of each type. (The case studies in Chapters 2 and 3 will provide more detailed information on indefinite shutdown).

Many permanent mine closures threaten the very existence of mining communities, and result in the relocation of most of their inhabitants. Indefinite and temporary shutdowns create similar impacts to those of a permanent closure but there are two important differences: there is the uncertainty as to the duration of the shutdown, and there is the opportunity in most cases for workers to continue living in their community, though without access to other sources of local employment.

Uncertainty over the occurrence and duration of mine shutdowns and eventual closure discourages long-term commitments by residents and investment by the private service sector. It also enhances community turnover. In many cases, the final shutdown is "preceded by a round of increased short-time working, longer shut-down periods and increased lay-offs" (Molloy & Bradbury, 1983, p.43). In addition, there is great uncertainty as to whether a temporary or indefinite shutdown is an isolated event or whether the mine is "undergoing a more lasting decline" (Molloy and Bradbury, 1983, p.46).

TABLE 1.1 - CATEGORIES OF MINE SHUTDOWNS

Category & Definition	Causes of Shutdown	Causes of Uncertainty
<u>TEMPORARY</u> - a cessation of mine operations for a <u>known</u> period of time. Re-start up date is known. - usually short-term	- cyclical downturn in international mineral markets; - need to reduce over-supply of processed ore at local mine.	- unexpected continuation of cyclical downturn could result in <u>extension(s)</u> of temporary shutdown, i.e., a temporary could become indefinite.
<u>INDEFINITE</u> - a cessation of mine operations for an <u>unknown</u> period of time. Re-start up is expected but date is not known.	- downturn in international mineral markets with no significant improvement in sight.	- extended period of downturn in international markets or continually decreasing prices could render mining operation economically non-viable and could result in permanent closure of mine after long period of uncertainty.
<u>PERMANENT</u> - a permanent cessation of mine operations.	- exhaustion, either economic or physical, of ore body. - long-term structural problems with economic viability of mine.	- original estimated date of closure often changes due to unforeseen fluctuations in price or discovery of new ore bodies.

While the social impacts of a mine shutdown or closure vary according to the circumstances in which it occurs (e.g., the type of shutdown, the level of preparedness, the remoteness of the community, and the prevailing economic conditions), the following provides a general picture of the basic community problems which they precipitate:

The loss of mine employment contributes to an overall contraction of the local economy and population. The consequent loss of municipal revenues makes it difficult to maintain the existing level of community services. Federal and provincial or territorial governments must often expend large sums of money for community and personal income support programs.

The social consequences that a declining community faces are severe. Many adaptations have to be made as residents are faced with relocating, coping with the prospect of unemployment or developing new work skills, and formulating new social relationships. Communities also become aesthetically depressed as homes and commercial buildings become vacant... (E,M,&R,1976,p.9).

1.4 - Planning For Mine Shutdowns

Planning is a systematic process involving the recognition of a problem, the development of alternative strategies to deal with it, the evaluation of the effectiveness of these alternatives in achieving desired objectives, a decision as to the best alternative and finally, the monitoring of the effects of this alternative (once implemented) in achieving objectives. Such monitoring reflects the iterative nature of the planning process and ideally, leads to a better understanding of the

nature of the problem and consequently, the development of more appropriate and effective strategies to deal with it.

A major problem associated with a mine shutdown is the lack of systematic planning for its occurrence. Within the resource community literature, for example, only a handful of studies have focussed on the community consequences of a mine shutdown or closure (for example, Himmelfarb, 1976; Hegadoren, 1979; St. Martin, 1981; Molloy and Bradbury, 1983). Recognition of the community consequences of the different stages of mine shutdowns was forwarded by St. Martin (1981) in her 'winding-down' versus 'closure' concept: the former referring to the decline of mining operations, the latter to the complete abandonment of the mining operation and, consequently, of the mining town by the company.

Existing studies indicate that, in many situations, the actual shutdown and resulting community decline have been, as Molloy and Bradbury (1983, p.42) noted, "[d]isorganized, unexpected events, in contrast to the careful and regulated establishment of the town." Hegadoren and Day (1981, pp.265-6) further pointed out that:

... Mine terminations are inevitably accompanied by charges and counter-charges over the failure to plan for the long-term stability of mine settlements, unemployed miners, and local secondary and tertiary sector employees who service the mining fraternity.

It appears that, by far, the most common approach to a mine shutdown - whether permanent or indefinite - is the ad hoc approach (Fleming, 1978; Hegadoren, 1979; Molloy and Bradbury,

1983; Task Force¹, ,1982). By ad hoc is meant unsystematic and reactive.

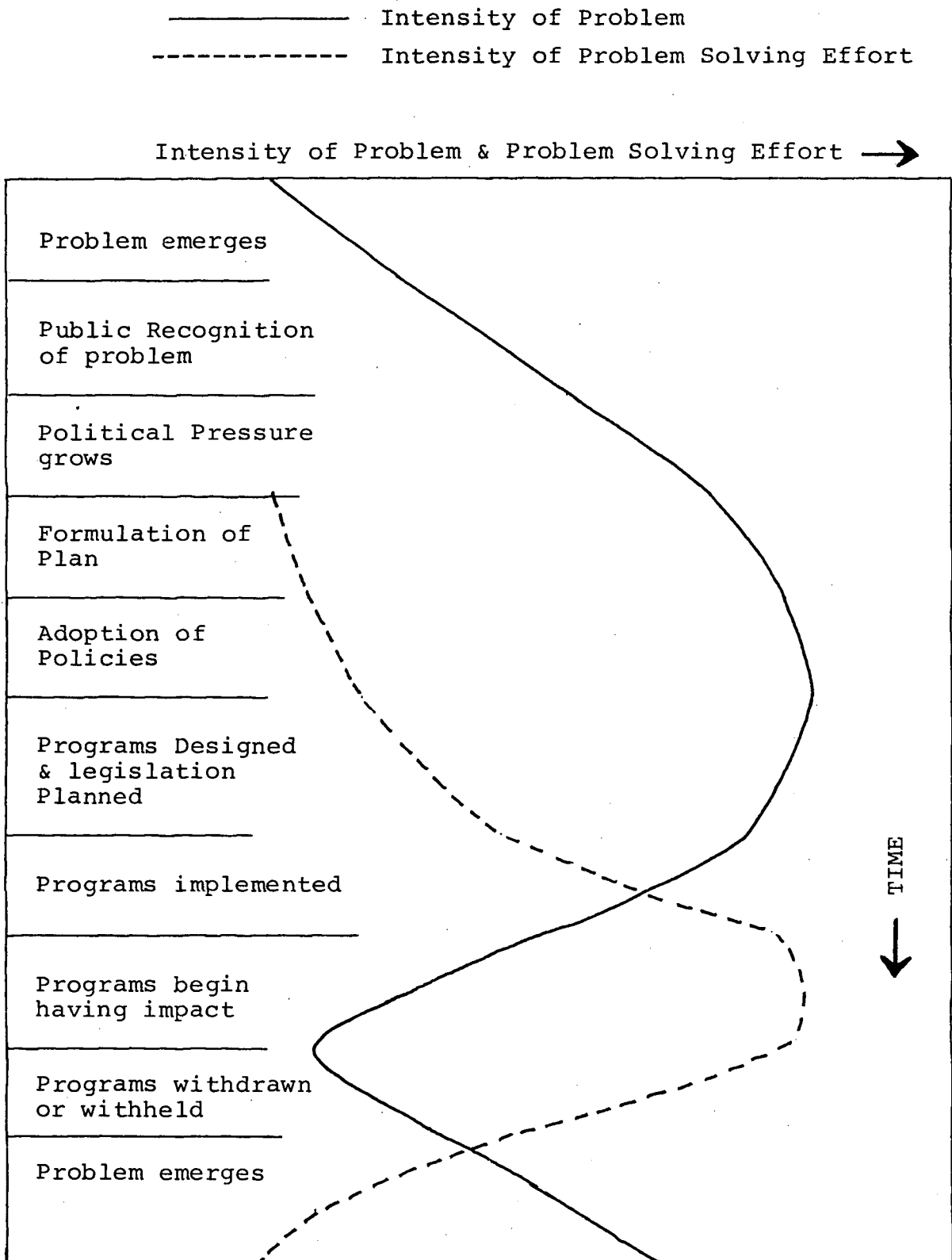
In most cases, the mining company, union, and government(s) have attempted to develop plans for dealing with shutdown once it has been announced. Figure 1.1 presents a theoretical construct of this reactive approach and shows the resulting lag in developing remedial measures. Plans typically range from 'bail-out' assistance to emergency make-work projects to economic diversification strategies. In some cases, local task forces were established to determine future options for the community while, in others, employment committees were formed to develop 'make-work' projects for those laid off.

In addition to creating community problems, the lack of planning for mine shutdowns has had serious ramifications for those regions dependent on mines for their long-term social and economic development. The costs of assisting troubled communities and their mines in a 'crisis-induced atmosphere' often results in an inefficient use of financial and administrative resources which detracts from meeting longer-term needs.

The lack of a systematic approach to managing mine shutdowns has been attributed to several factors:

¹A Task Force composed of Federal, Provincial, and Territorial government representatives as well as industry and union personnel was created in January, 1982 to examine the problems experienced by mining communities as a result of the downturn in the mineral markets.

FIGURE 1.1 - THE AD HOC APPROACH TO A PROBLEM



SOURCE: Adapted from Gunton(1982)

•According to Bowles(1982), emphasis has been primarily on manpower planning for the operation stage of a mining project. This reflects, to a large degree, the nature of the problems associated with resource extraction projects during the 1950s and 1960s, a period of unparalleled growth in the primary resources sector. The increased demand for minerals during this period resulted in the development of a number of mines and affiliated communities in 'frontier' regions.¹ As a result, the focus of planning reflected the mining company's need to attract, retain and service a stable workforce and their families in an effort to reduce the typically high labour turnover rates experienced at northern and remote mines.

•The emphasis by planners on the physical and social components of a mining community as a means of achieving community 'maturity' has resulted in a tendency to overlook the problems created by the community's economic dependency on a single employer. Robinson (1963,pp.3-4) pointed out that:

[Planning] for these towns must be termed a failure. With a few exceptions, the plans do not reflect the special social, geographical, economic, or governmental circumstances under which they are built. The plans have differed little from those being carried out in the more developed urban centres in southern Canada. In short, there have been no original or specially-adapted solutions equal to the individual problems of site and situation that these towns face. While these permanent new communities are in many cases models of what a community should look like

¹Between 1945 and 1976, 46 new mining communities were built across Canada (Robinson, 1962, p.3). Currently, there are approximately 142 dependent mining communities (Task Force, 1982).

(indeed, they are often referred to as 'planned, model communities'), the one compelling fact of life that the planners and builders did not, or could not, plan for was their dependence on a single industrial enterprise, and one highly vulnerable to fluctuations in the supply and demand for its resources.

The tendency to overlook the distinctions between an 'instant' and an 'evolved' community as well as the requirements for a 'mature' community is evident in the dearth of planning literature on the economic bases of resource communities as noted by Marchak (1983) and Bradbury (1980). There appears to have been little evidence of recognition by planners of the fact that southern communities have evolved physically, socially, and economically over time to produce a 'mature' community, whereas the single purpose of a mining community would seem to preclude such maturity in the long run.

Lovosky (1970,p.145) describes the expectations for the instant mining community:

Instant towns have often been referred to as being 'born already grown up'. Such towns are expected to provide, almost instantly, the physical, social and even economic environment necessary for the growth of a healthy and balanced community. But growth and maturity are slow and deliberate processes and instant towns rather than being 'born grown up' seem to be 'born prematurely', unformed and unstructured, often struggling for their very existence.

Indeed, most 'instant' northern mining communities are left to 'evolve' on their own once their 'maturity' stage (ie., fulfillment of the mine's manpower requirements) has been reached. The problem lies in the lack of a stable economic foundation which constrains the development of community stability. As a result, most mining communities, unassisted by planners or plans to cope with a mine shutdown or closure, tend

to become 'instant' ghost towns.

•Social and economic problems related to the shutdown of a mining operation have tended to be viewed, particularly in times of economic growth, as isolated and temporary events (Fleming,1978). In addition, these costs were perceived as part of the social costs of economic growth (Kapp,1971). Any social and economic dislocation was considered a temporary and local problem which could be, and often was, absorbed by the rapid growth in other sectors and regions, and which could be mitigated by remedial measures (McKersie,1983; Labour Canada,1979).

The dearth of legislation and policies regarding planning requirements for resource community decline reflects these perspectives that the mining town's biggest problem is turnover, that isolated instances of mine closures and shutdowns can easily be absorbed by the larger economy, and that community planning means physical planning.

Since the late 1970s however, the emphasis on environmental, social and economic impact assessment, impact management, and monitoring of resource development projects has helped to direct attention to hitherto ignored externalities of mine shutdowns - even though most of the external costs of shutdown remain unexamined..

In recent years, there has also been an increasing recognition of the need to manage the shutdown and community decline processes in order to reduce unnecessary trauma and

inefficiency (Hegadoren, 1979; Task Force, 1982). There is increasing emphasis being placed on the need for shared responsibilities amongst involved actors for developing a more orderly and equitable process of decline (Molloy & Bradbury, 1983).

Recognition of the impacts of mine shutdown, the need for joint management of the shutdowns, and the need for plans to guide shutdown management has stemmed for the most part, from the consequences of the worst mineral recession since the Depression (Task Force, 1982). The 1981-82 recession adversely affected an estimated 80 out of 142 mining communities (DIAND, 1982). Accompanying this has been a greater awareness of the increasing uncertainty over the life-span of a mining operation, given the current uncertainty in the international mineral markets, in addition to the physical finitude of ore bodies.

1.5 - Thesis Rationale

This thesis addresses several areas which have received minimal attention in the resource community planning literature. Of most importance is the lack of a planning framework for mine shutdown and possible community decline. This is in marked contrast to the level of planning undertaken for the community's creation. While previous studies focus on the need to plan, and outline the major requirements of a 'pro-active' stance, no study has proposed a planning process which outlines how this

might be done. Mechanisms such as a mining fund, advanced notification by the company of a shutdown, financial support and compensation, job-protection programs, economic diversification strategies, the creation of mobile 'fly-in/fly-out' camps, and the development of regional mining centres, have been proposed in existing studies as viable for offsetting the shutdown trauma. Such mechanisms, however, tend to be applied in isolation, and hence do not address systematically the needs of a mining community faced with the possible shutdown and inevitable closure of its mine.

In response, this thesis proposes and develops a systematic but flexible planning framework for a mining community attempting to manage a mine shutdown which could possibly precipitate its decline. By systematic is meant an orderly and organized approach; by flexible is meant that this approach takes into account the particular situation, needs, and circumstances of each community. In developing the planning framework, the thesis examines the underlying principles of disaster planning after identifying the circumstances requiring disaster planning and considering the parallels to those of mining communities.

Unlike most of the existing studies, which have focussed on permanent closure, this thesis examines, through the case studies, the problems created by an indefinite shutdown. With an appreciation for the community problems of both categories of shutdowns, the thesis incorporates the uncertainty inherent in mine shutdowns into the proposed planning process.

Finally, the thesis recognizes the need for national policy planning as part of the overall preparedness planning framework.

1.6 - Research Methods and Scope

Information for this thesis has been obtained from a literature review and from field research on two case studies.

Two Yukon mining communities, Elsa and Faro, which experienced the indefinite shutdown of their mines during 1982-83, are used as case studies for the thesis. Information on each case study was obtained through interviews held in Whitehorse, Elsa, Mayo, and Faro during August, 1982. A list of those interviewed is contained in Appendix 1. The number of interviews is small compared to the total population of both communities. This was because many residents had already left the communities. However, while the information obtained from those interviewed may or may not accurately represent the communities as a whole, it is nonetheless considered to be valuable in ascertaining some of the problems involved in a mine shutdown, as well as preparing for it. Information regarding the reasons for the mine shutdowns, the degree of planning for possible mine shutdown, the types of responses developed once shutdown had been announced, and the problems associated with these responses was sought.

A second trip was made to Whitehorse in August, 1983, to obtain an update of the two communities as well as to discuss

the feasibility of a preparedness planning approach with government officials.

Further information was also gleaned from local and national newspaper articles which described the community consequences of many mining shutdowns, including the two case studies; while government and company documents were examined to obtain specific background information on the two case studies.

Additionally, various studies and articles in the fields of resource community planning, northern resource development, impact assessment, and mining were reviewed to obtain an understanding of the main issues involved in mining communities and shutdowns. The limited literature on planning for mine shutdowns - descriptive, evaluative, and prescriptive - necessitated that the review be extended to include natural disaster planning. The latter provided information on how procedures for dealing with uncertainty and for reducing social and economic dislocation.

Information on the problems experienced by other mining communities during 1982-83 was obtained at a policy discussion seminar sponsored by the Center for Resource Studies at Queen's University in the fall of 1983.

While this thesis recognizes that it is a mine shutdown which precipitates the decline of its affiliated community, the mine shutdown is taken as a given. Therefore, the question of whether the shutdown should have occurred is not addressed. Rather, the need to plan for community reaction to the shutdown

is addressed.

Secondly, while the social and economic consequences created by a mine shutdown are presented and discussed to illustrate the need to plan for shutdown, the thesis does not examine them or their substantive mitigation in any detail.

CHAPTER TWO

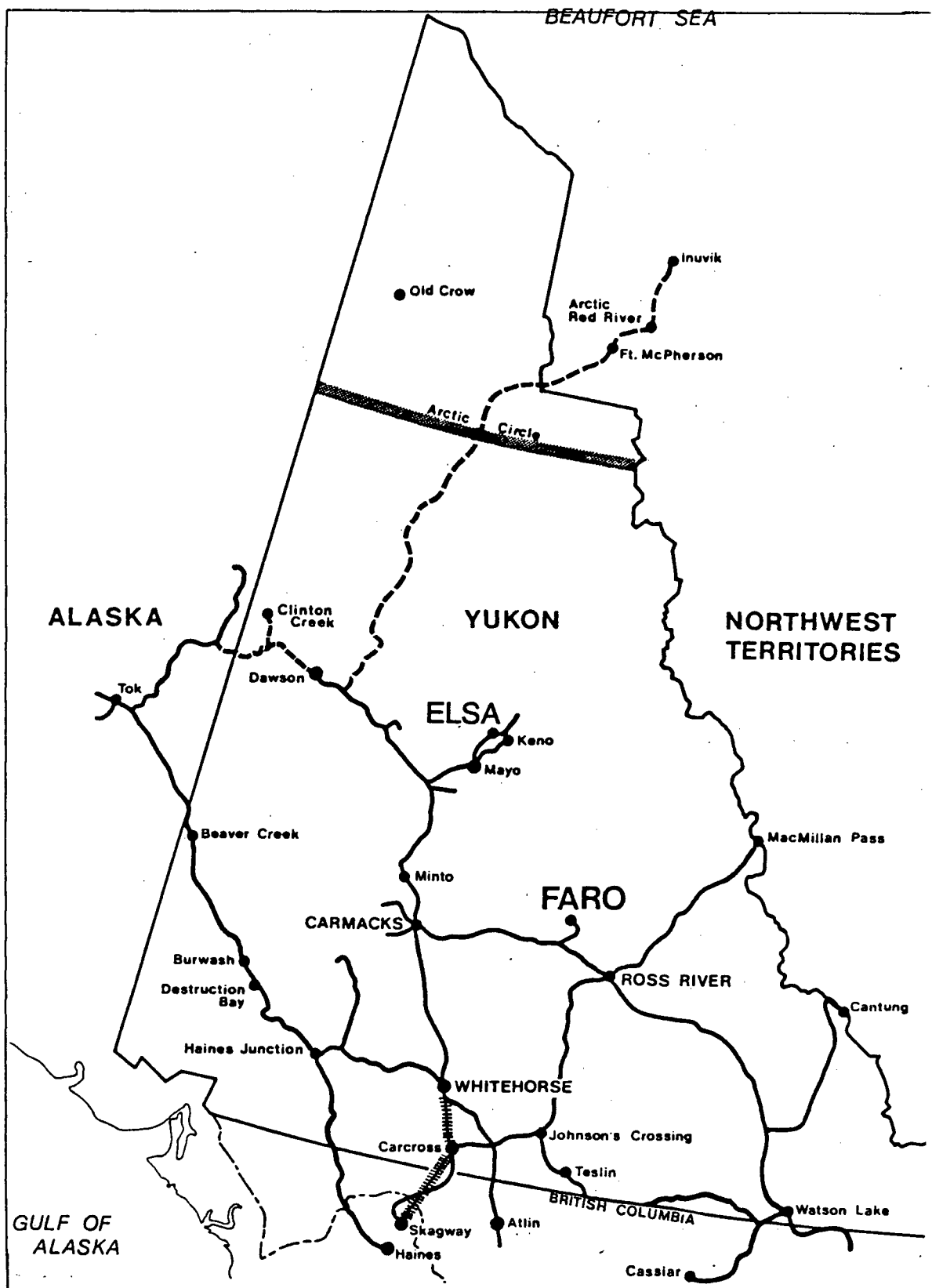
THE CASE STUDIES: ELSA AND FARO

Since the end of 1981, mining companies in Canada have been experiencing the worst mineral recession since the Depression (Task Force, 1982, p.12). Confronted with low mineral prices and low demand, they have responded with a restructuring of their operations. For most, attempts at reducing company losses and attaining efficiency have been made with production cutbacks (reflected by the shutdowns of their respective mining operations for varying lengths of time), a reduction in their capital expenditures, and lay-offs in all areas of operations (Task Force, 1982, p.9).

Such was the response of United Keno Hill (UKH) at Elsa, and Cyprus Anvil Mining Corporation (CAMC) at Faro (see Map 2.1). Confronted with rapidly declining silver, lead, and zinc prices, both shut down their Yukon mining operations until such time as prices and/or demand for their particular minerals increased to a profitable level. UKH shut down its Elsa operation for a stated indefinite period of time in July 1982, and thirteen months later resumed its operations. CAMC, on the other hand, originally shut down its Faro operation for a temporary period of three weeks (in July 1982), only to extend the re-starting date three times. At the time of writing, CAMC's operation remains shut down, although a make-work project related to the mine is currently in operation.

For their dependent communities, Elsa and Faro, these shutdowns have created corresponding periods of decline. The

MAP 2.1 - MAP OF YUKON MINING COMMUNITIES



purpose of the next two chapters is to describe the community consequences of the two shutdowns and to document the approaches taken by involved parties to the resulting social and economic dislocation. This background chapter provides the reader with a description of the two communities along with the causes and consequences of the mine shutdowns.

2.1 - Historical Background

Since the Gold Rush of 1898, mining has been the basis for the social and economic development of the Yukon. Private entrepreneurship provided the initiative for the development of new mines, needed communities and other infrastructure until World War II. Since then, the development of northern mines has been actively encouraged and assisted (directly and indirectly) through federal regulatory, financial, and developmental policies and programs.¹ During the 1960s alone, five new mines were brought into existence in the northern Territories, along with four new affiliated communities.²

Between 1966 and 1975, direct assistance was provided

¹The Federal government, under the BNA Act, has jurisdiction not only over lands north of 60° but also over the mineral resources of the Northern Territories. This includes all laws and regulations regarding the disposition of mineral rights, mining regulations, operating and safety rules, and mineral taxation and royalties (Wojciechowski, 1979, p.3).

²1962 - Canada Tungsten, Cantung, NWT;
 1964 - Cominco, Pine Point, NWT;
 1967 - Cassiar Asbestos, Clinton Creek, YT;
 1967 - Whitehorse Copper, Whitehorse, YT;
 1969 - Cyprus Anvil, Faro, YT.

through the Northern Minerals Exploration Assistance grants which paid up to 40% of the cost of exploration in the Yukon and NWT (Wojciechowski, 1979). Indirectly, assistance was given in the form of support services: railroads (e.g. Great Slave Lake Railroad for the Pine Point Mine, NWT); roads (e.g. Roads to Resources program which, for example, resulted in the construction of the highway from Mayo to Keno City); and airstrips. Further assistance was provided for labour recruitment, through immigration programs (between 1945-75, needed skilled labour was actively recruited from overseas) as well as manpower training and mobility programs (e.g. moving workers between regions and industries).

For the construction of new mining communities, assistance was provided through infrastructure - the building of roads, the surveying and laying-out of townsites, the provision of water and sewage facilities, power, schools, hospitals, and other community buildings (Wojciechowski, 1979, p.25).

2.2 - The Mining Communities

Both the mining communities of Elsa and Faro, while representing different stages in the evolution of mining communities, can be described in terms of their economic base, their physical settlement, and their social community. Table 2.1 summarizes their major characteristics.

2.2.1 - Elsa: A Description

Economic Base

TABLE 2.1 - CHARACTERISTICS OF ELSA AND FARO

	ELSA	FARO
mining company	UNITED KENO HILL (UKH) - Falconbridge (majority shareholder)	CYPRUS ANVIL MINING CORPORATION (CAMC) - Dome Petroleum (parent company)
type of mine	silver/lead underground and open-pit	lead/zinc open pit
commence-ment date	1947	1970
community status	company town	municipality (second largest in Yukon)
population	424 (1981 census)	1652 (1981 census)
# of mine employees	280 (1981)	660 (1981)
distance from mine	immediate vicinity	18 km.
turnover rates	1978: 149% 1981: 39%	1970: 90% 1981: 24%
mine wages	between \$11-15.80/hr	between \$11-15/hr
housing	(company owned) houses (90), and bunkhouses (7)	(company owned) houses (479), apts (375) for singles
rents	-houses: \$30-75/mth. includes utilities -bunkhouses: \$2.75/day includes meals	- houses and apts.: between \$15-80/month - after 10 years, no rent
community facilities	- recreation centre, rink, company owned market, gas station, post office	- gym, theater, arena/ rink, playing fields, hospital, school (K-12), RCMP, dentist, airport, hotel

The silver-lead underground mining operation at Elsa is one of the oldest in Canada, and consists of several mines in the Calumet-Keno Hill- Mayo region in the Yukon. This area was the principal mining region in the Yukon between 1914 and 1941. Closed during World War II, it was acquired by the Keno Hill Mining Co. Ltd, whose name later changed to United Keno Hill Mines Ltd.(UKH), of which the major shareholder is Falconbridge Nickel.

The UKH mining operations comprise a mixture of old and new mining methods. Wooden supports, for example, are still used in underground operations, while newer ore bodies are extracted through an open-pit operation.

Physical Settlement

Elsa reflects an early era of mining town in that it is located in the immediate vicinity of the mine site. Originally, it was one of the oldest and most transient of several communities in the region. However, as operations were consolidated, so were the mining communities. Elsa, Keno City and Calumet were left as the surviving communities. In the mid 1960's, Calumet was abandoned and its work force moved to Elsa.

Aside from the mine site, the physical setting of Elsa is picturesque. Built on the side of a hill, it is surrounded by low mountains and wide valleys. The town itself is divided in half by the Mayo-Keno highway. Other than the recreation hall and the store-bank-post office building, all other buildings

(including houses) are connected to the mining operation and owned by UKH.

Social Community

The population of Elsa prior to shutdown was approximately 425, all of whom were employees of the mining company. Many UKH employees are older immigrants who came directly to Elsa from various regions of eastern Europe during the early 1950s. The proportion of single workers to those with families prior to shutdown was 70:30 (Berg, 1982).

The community has historically experienced high population turnover rates as a result of problems of low wages and inadequate living conditions (Berg, 1982; Mease, 1982; P. MacDonald, 1982). This culminated in a nine-month strike during 1980-81 by UKH employees. Settlement of the strike involved an agreement by the company to provide better housing along with wage increases. According to several interviews, the relationship between management and employees had improved until the time of the shutdown (Berg, 1982; Franke, 1982).

The development of Elsa has been one based on private initiative - both on the part of the mining company and its employees. The characteristics of the town reflect, for the most part however, the evolving values and priorities of the company, since Elsa is a company town, entirely owned and administered by the company.

2.2.2 - Faro: A Description

Economic Base

In 1969, after five years of intensive studies and negotiations, the "one big mine needed for the Yukon" - the Cyprus Anvil lead-zinc mining project - was brought into existence. Considerable investment was made by the federal government, Northern Canada Power Commission, and the White Pass and Yukon Corporation. The capital cost was \$63 million for mine production equipment, concentrator, related plant services facilities, and townsite. White Pass spent \$22 million in railway transportation equipment needed to haul the ore concentrate from Faro to Skagway, Alaska, while the federal government invested \$28 million in constructing an access road, servicing the townsite, delivering power to the mine and townsite, and construction of a highway from Carmacks to Ross River (MacPherson, 1978, p.127).

In 1975, CAMC purchased new deposits as a means of extending the life-span of the mining operation beyond 2000 A.D. Currently, CAMC is the largest mine in the Yukon, the largest open pit mine in Canada, and one of the largest Canadian lead-zinc producers. Its importance to the Yukon territorial economy is reflected in the fact that in 1981, it directly and indirectly provided employment for 20% of the Yukon's total labour force, with total wages and salaries approximately \$60 million (DIAND, 1982)

In 1981, CAMC was bought by Hudson Bay Oil and Gas, which in turn was bought by Dome Petroleum Ltd. Due to cash flow

problems of the parent company, the mine is currently for sale.

Physical Settlement

The development of Faro signified a new era in Yukon mining communities; not only in the degree to which it was planned, but in the extent of government assistance for its development as well as its designation as an 'open' (e.g., municipal) community. Its construction in 1969 involved 3 main parties: Cyprus Anvil, the Yukon Territorial government (YTG), and the Department of Indian Affairs and Northern Development (DIAND), representing the federal government. Its location, development and form was planned by a Vancouver firm. The decision to make Faro an 'open' community rather than a 'closed' company town was based on considerations of townsite financing and community administration (Foster Economic Consultants, quoted in Macpherson, 1978, p.124).

Currently, Faro is the second largest community and municipality in the Yukon. Its community plan includes zoning of areas for the town centre, residential neighbourhoods, and service industries. Similar to most mining communities built since the 1950's, the townsite is separated from the minesite by some 18 kilometres. Faro, in contrast to Elsa, is a young and modern suburban community, complete with \$120,000 houses, modern apartment buildings, townhouses, and an abundance of consumer goods such as boats, trailers, and campers.

Social Community

The community of Faro consists of CAMC management and employees, government workers, and a private service sector. The population is relatively young, with most residents between the ages of 29 and 34. Interviews with Faro residents indicated a good relationship between CAMC and the community.

In spite of their differences in size, status, sophistication, and social characteristics, Elsa and Faro are characterized by their dependency on their respective mines for their economic mainstays and for their continued existence. The following section describes the problems associated with such dependency.

2.3 - Reasons for Indefinite Shutdown

[M]inerals have time value... Resources are not, they become. They expand and contract in response to human wants and needs and to technological, economic and political conditions (Spooner, 1981, p.9).

It appears that three major factors were responsible for the decisions of UKH and CAMC to shut down their mining operations indefinitely (these are summarized in Table 2.2):

- declining silver, lead and zinc prices. As depicted in Table 2.3, silver and lead prices had declined approximately 60% and 50%, respectively, between 1980 and the end of 1982, while the price of zinc had dropped about 20% from its 1981 peak;

TABLE 2.2 - REASONS FOR SHUTDOWN

UKH - ELSA	CAMC - FARO
<ul style="list-style-type: none"> - high operating costs and low silver prices were given as official reasons - \$13.6 million loss in 1981 following a \$7.7 million profit in 1980 - loss attributable to: <ol style="list-style-type: none"> 1) \$10.6 million write-off of expansion project costs, project suspended Nov/81 2) nine month strike between Sept/80 and May/81 at a time of record high silver prices. 20% decline in silver production. 	<ul style="list-style-type: none"> - high operating costs, heavy losses, low lead & zinc prices - heavy losses incurred in 1981-82: <ul style="list-style-type: none"> - \$7.2 million in first nine months of 1981 - \$15.7 million in first quarter of 1982 due to: <ol style="list-style-type: none"> 1) decline in sales revenue due to lower lead prices & production; 2) operating expenses/tonne of ore milled increased by 108.6% between 1978 & 1981; 3) a debt-financed expansion project (\$240 m.) designed to extend life-span of operation til 2000 A.D. CAMC borrowed \$130 million to acquire and begin project. \$7 million was paid in interest in 1st quarter of 1982.

TABLE 2.3 - AVERAGE ANNUAL PRICES OF MAJOR METALS

Average annual prices of major metals in Canadian funds (1976 - 1982)							
	1976	1977	1978	1979	1980	1981	1982
Copper (cents/lb)	68.389	69.506	74.586	107.546	117.75	100.370	88.241
Gold* (\$per/oz)	123.107	157.089	227.907	359.289	716.087	551.178	461.711
Lead (cents/lb)	22.653	31.482	36.823	59.923	49.350	44.521	32.845
Molybdenum Ore (\$/lb)	2.909	3.917	5.371	8.957	11.420	10.183	9.740
Nickel Metal (\$/lb)	2.225	2.446	2.466	3.171	3.992	4.111	3.944
Silver (\$/oz)	4.268	4.920	6.171	12.974	24.098	12.617	9.780
Zinc (cents/lb)	37.624	35.531	34.757	43.717	44.05	54.240	48.670
Exchange Rate (US dollar =)				1.17152103	1.16900356	1.19898095	1.23247952
Source: Metals Week * London, P.M.							

SOURCE: Tibbo (1983)

- higher operating costs and lowered production. Both mining companies cited increased operating costs in the areas of transportation, power and labour. For example, in the case of UKH, a high wage settlement after a bitter strike created increased labour costs. CAMC cited an increase of 108% between 1978 and 1981 in operating costs (DIAND,1982). However, it appears that this was primarily due to increased administration costs and interest charges connected to the expansion program discussed below;

- heavy losses as a result of ill-timed expansion programs. The mineral boom of 1979-80 resulted in expansion programs by both companies. Additional employees were hired, mine facilities were expanded or improved, and new properties were acquired. By 1981 however, metal prices were rapidly declining, making such expansion no longer viable. UKH wrote off its Venus expansion project at a loss of \$10.6 million (UKH,1981,p.5). This aggravated its loss of revenue during the strike period in 1980, a time of record high silver prices (UKH,1981,p.11).

CAMC had embarked on an ambitious 8 year expansion program involving the acquisition of two new properties at a cost of \$240 million, of which \$130 million were borrowed funds. The cost of financing this expansion represented 42% of the total operating cost increase in 1981. Since the first quarter of 1981, CAMC has been in a loss position as a result of interest rates estimated at \$2 million per month and low mineral demand. CAMC found it increasingly difficult to meet its operating costs and consequently, had no choice but to shut down its mine

(DIAND, 1982; J. Carrington, 1982). Currently, the mine is for sale.

2.4 - Community Consequences of Indefinite Shutdown

The indefinite shutdowns resulted in major social and economic dislocation for the residents of Elsa and Faro and precipitated the indefinite decline for both communities. As Table 2.4 indicates, however, such dislocation had already commenced with the permanent lay-offs experienced a few months earlier.

The following provide a brief overview of the major community consequences (these, along with Territorial and national impacts are summarized in Table 2.5):

- loss of employment for the majority of residents. In Elsa, 270 were laid off, while the remaining 20 were kept on for maintenance work. In Faro, a total of 600 mine employees were laid off indefinitely. The CAMC shutdown also caused the loss of 83 construction jobs in Faro, along with approximately 124 jobs in the private service sector (DIAND, 1982, p.61). Lay-offs were also experienced in Whitehorse as a result of the CAMC shutdown. For example, immediately following that shutdown, 131 White Pass employees were laid off (DIAND, 1982, p.59).

- loss of community population due to out-migration either by choice (Faro) or by eviction (Elsa). In the latter case, the company decision to close the town resulted in the relocation of

TABLE 2.4 - INDEFINITE MINE SHUTDOWN AT ELSA AND FARO:
THE PROCESS

UKH - ELSA	CAMC - FARO
<ul style="list-style-type: none"> -Mar 3/82- permanent lay off of 88 or 280 workers -June 28/82 - indefinite shutdown announcement made by Bd. of Directors (Toronto) - 2 wk. notice terms: 135 unionized workers laid off July 13 <ul style="list-style-type: none"> -46 to shut down mine - 25 laid off Oct 31 - relocation of all but caretakers by end of Aug/82 -July 1/83 - 120 workers recalled -August 11/83 - operation of mine resumed, total employees=140 	<ul style="list-style-type: none"> - Feb 4/82 - announcement of 10% staff cut by end of year through attrition - Mar 9/82 - announcement of lay-off of 95 of 770 employees - Mar 18/82 - permanent lay-off of 95 - Mar 24/82 - announcement of 3 week temporary shutdown starting July 1 - April 30/82 - announcement of extension of shutdown to 2 months from June 4-Aug 2 - June 4/82 - 600 laid off - July 9/82 - extension of shutdown to October/82 - Sept 8/82 - extension of shutdown to spring 1983 - May 24/83 - job creation project begins

TABLE 2.5 - SOCIAL AND ECONOMIC IMPACTS OF UKH & CAMC
MINE SHUTDOWNS

LEVEL	UKH	CAMC
individual	<ul style="list-style-type: none"> - forced relocation - unemployment - uncertainty as to recall 	<ul style="list-style-type: none"> - 1st extension: extended holiday - 2nd extension: uncertainty & anxiety esp. for those with school-aged children - 3rd extension: continued uncertainty
community	<ul style="list-style-type: none"> - reduced services - loss of social networks for those remaining 	<ul style="list-style-type: none"> - population halved - loss of major source of revenue (\$1million municipal taxes) - reduction in amenity provision
territorial	<p>- increased demand for social services as a result of these two shutdowns; unemployment increased by 4% to 17%; as a result of lost revenue, YTG had to borrow \$43 million from federal government to pay bills; loss of population (7%) of whom a large majority were skilled workers; shutdown of other major private employers dependent upon CAMC</p> <p>- provision of extra assistance to CAMC (\$2.6 million assistance)</p>	
national	<p>- increased demands for UIC and welfare. CAMC received a special assistance package of which \$19.6 million is an interest free federal loan as well as \$4 million in aid from UI Act and NEED program.</p>	

SOURCES: DIAND (1983a), YTG (1982), interviews.

all but a handful of employees who were retained to shut down the mine. In Faro, increasing out-migration occurred as the shutdowns were extended. Many mining employees chose not to wait out the winter at Faro, where the cost of living is much higher than elsewhere. The population of Faro had dropped from a pre-shutdown level of just below 2000 to a current level of approximately 750 (Bazowski, 1983).

- social dislocation created by the loss of population and relocation of employees. Residents of Elsa were shocked by the company's eviction requirement; for even during the strike period in 1980, they had been allowed to remain in company houses (P. MacDonald, 1982). Further, both Elsa and Faro had experienced much lower population turnover rates within the last few years, resulting in the development of stronger social networks. The consequent loss of population precipitated, for example, a decline in the number of voluntary organizations. One Faro resident pointed out that it would take a long time to regain the sense of community that existed prior to shutdown (E. Carrington, 1982).

- a reduction in services and amenities. In Faro, for example, the shutdown of the mine and the loss of population resulted in a loss of income and subsequent decline in the tax base and consumer base which, in turn, affected the availability of services (such as air flights, banking, grocery and postal services) and the municipality's ability to meet its debt payments.

•uncertainty. Those interviewed indicated that of all the consequences experienced at a community level, uncertainty was the most difficult to deal with. The psychological costs of uncertainty over the duration of the shutdown made long-range planning difficult while uncertainty over what to do during the shutdown, for example, whether to leave or not leave, created considerable instability at both individual and community levels.

In addition, residents in Faro were exposed to continuous rumours as to the reopening of the mine. This was due to:

•the lack of an information system sponsored by either the company or government whereby a resident could learn of the current situation. Queries were directed to Dome's head office in Calgary.

•meetings between CAMC and the federal government, and CAMC/DIAND/union were held in other centres such as Ottawa and Calgary, with little or no local community input. This tended to heighten feelings of uncertainty and insecurity, especially for the private service sector.

The UKH and CAMC indefinite shutdowns, while necessary for the economic efficiency of both companies, created serious social and economic dislocation for their respective affiliated communities, Elsa and Faro. It quickly became evident that little had been undertaken by involved parties in terms of preparation for such an occurrence. The following chapter outlines the responses of those involved and documents some of the problems which these responses created.

CHAPTER THREE

CURRENT COMMUNITY RESPONSES TO MINE SHUTDOWNS

The objective of a shutdown, from a company perspective, is to cut costs and reduce company losses in a declining mineral market. For the affected community however, shutdown means the loss of employment for the majority of the residents, as well as a threat to its future existence. From a societal perspective, a shutdown often results in political pressure to "reduce the resulting social and public costs and to introduce some social equity" (Gordus, 1981, p.9). It is within this framework of conflicting interests, goals, and priorities that the responses to the community dislocation created by a mine shutdown will be examined.

3.1 - Planning and Provisions Prior to Notification

In both situations, there was little planning undertaken by involved sectors prior to the first layoffs. Several reasons for this lack of planning were cited during interviews with mine management, community residents, union officials and government representatives. These include:

- the focus on continued growth and even expansion plans as a result of the mineral boom of 1979. In the words of the UKH mine manager, "No plans were made a year ago for temporary (i.e., indefinite) closure as all eyes were on expansion" (Dickson, 1982). This perspective was echoed by union executives and mine employees both at Elsa and Faro. Further, the sudden drop in

metal prices had caught most off guard and gave little time for developing alternatives.

- the lack of previous shutdown experience at UKH and CAMC. Most of those interviewed mentioned that neither UKH nor CAMC had experienced a shutdown before and therefore there hadn't been any reason to prepare for its possibility. Perhaps this reflects a cognitive dissonance on the part of those interviewed, since, as has been mentioned above, shutdown is an inherent and inevitable feature of mining which had been experienced by some of the miners at other mines. According to long-time UKH miners, the company had been operating since 1947 on a year to year basis (Mease, 1982). In 1966, UKH gave notification of the permanent closure of its Elsa operation, an event which was never realized. A study taken at the time indicated a similar lack of preparedness by those to be affected (YTG, 1967).

- the 'mother Anvil' syndrome. From interviews in August, 1982, with those associated with the CAMC shutdown, there had been widespread belief that the government would never let Cyprus Anvil continue its shutdown due to its economic importance to the Yukon territory (Power, 1982; Mitchell, 1982). The security which such a belief created appeared to be compounded by the expansion plans by CAMC as well as by its new housing investment in the Faro townsite. The permanent structure of Faro lent credence to the invincibility and permanency of the community. It appeared that some residents were making plans for their future in Faro, not elsewhere. The wife of the CAMC mine manager

pointed out that because she and her husband considered Faro their home they had done little planning as to other alternatives (E. Carrington, 1982).

The same feelings of security were evident in Elsa in spite of it being a company town. There was a widespread belief that even if the mine shut down, employees would be allowed to remain in company houses and hence, for the majority, few 'contingency' plans were made (G. MacDonald, 1982).

- the 'crying wolf' syndrome. According to several people familiar with the Elsa operations, UKH had been giving informal notice of the temporary nature of its operations since 1947. After a while, few took these warnings seriously and hence, people were surprised when it actually happened.

- perceptions of shutdown impacts. It appeared that many of those interviewed had not considered the full nature and extent of the social and economic impacts accruing from a shutdown (Berg, 1982; Wight, 1982). In part, this may have been due to changes in the general economic climate. In the past, dislocation has been offset by employment opportunities in other mines, regions or sectors; whereas currently, impacts appear to be exacerbated by the severity and extent of the current recession which has, in effect, shut off other employment opportunities.

Despite the lack of preparedness plans at the time of shutdown notification, some basic provisions were in place in Collective Agreements as well as various social programs. The

unions and mining companies had negotiated lay-off and termination conditions which were included in their respective Collective Agreements.¹ The relevant sections of these Agreements are reproduced in Appendix 2; as will be noted, these conditions stipulate a minimum notification period for both lay-offs and terminations in the case of the Elsa operation and for termination only in the case of CAMC. Both outline the specifics of relocation assistance.

In addition, public assistance programs were available to assist in mitigating some of the economic consequences of unemployment. These relevant programs are summarized in Table 3.1. It should be pointed out that these programs are designed to help all Canadians and were not developed specifically for the social and economic dislocation created by a mine shutdown.

3.2 - Responses Following Shutdown Notification

The following provides an outline of the adjustments which occurred during the months immediately following notification of shutdown.

¹Both Collective Agreements reflect the minimum standards established by the Canada Labour Code for termination requirements. The Code does not require notification for temporary or indefinite lay-offs.

TABLE 3.1 - SUMMARY OF FEDERAL GOVERNMENT'S ASSISTANCE PROGRAMS

PROGRAM	JURISDICTION	OBJECTIVE(S)	ELIGIBILITY	NOTES
Unemployment Insurance (UI)	Federal - Canada Employment & Immigration Commission (CEIC)	- to maintain a minimum level of income for a period of time.	- all those employed in the labour force for a min. of 10-14 wks. and who have contributed.	- automatic program although the laid-off worker must apply for IU benefits.
Work Sharing	Federal - Sec. 37 of UI Act	- to avert temporary lay-offs through shorter work week, work sharing and UI benefits for days not worked.	- employer must demonstrate that the shortage of work is temporary & unavoidable. - employees must be eligible for UI.	- requires an agreement between employer & employee to divide available work in order to avoid layoffs.
Manpower Consultative Services (MCS)	Federal - CE&IC	- to assist employers & employees in finding re-employment or altern. solutions to lay-offs through jt. negotiations.	- individual firms - industrial sectors - particular geographic areas	- request for MCS must be made by employer in agreement with union. - primarily for terminations/closures
Mobility Program	Federal - CE&IC	- to assist employers in finding new employment for laid-off workers & to assist in their relocation.	- assistance is offered to employers who have est. a MCS adjustment committee	- up to 50% of relocation costs are reimbursed.
Job Creation	Federal - Section 38 of UI Act	- to create short-term employment projects for temporarily unemployed workers & to retain them in the community.	- firms faced with short term lay-offs - must not result in unfair competitive advantage to firm	- permits extension of job creation project from 52-58 weeks
Canada Community Development Projects	Federal - CE&IC	- to create jobs for unemployed in communities which would be of value to community	- non-profit organizations - Band Councils	- emphasis is on the hiring of 'disadvantaged' people - maximum time for program is 3 years.
NEED (New Employment & Expansion Development)	Federal - CE&IC	- to create incremental employment opportunities for unemployed.	- jt. program between federal & prov. or territorial gov'ts. - must employ local people - jobs must be short term in nature but lead to ongoing	- direct job creation project with private sector. - min. 12 wks; max- 52 perm. jobs at end.

SOURCES: Task Force on Mining Communities Report, 1982.
Social Planning Council of Metropolitan Toronto. Working Papers(1980)

3.2.1 - Elsa

The Mining Company

The responses of UKH reflected a primary concern with meeting its obligations contained in its Collective Agreement, as well as with reducing the costs of shutting down its operations. As mentioned above, the terms of lay-offs, terminations, and relocation were bound by its Collective Agreement. These conditions were outlined in a meeting between company and union, followed by a written notice to the United Steelworkers of America (USWA) union local by the mine manager. Copies of this notice are included in Appendix 3.

Originally, UKH¹ provided two weeks notice for both the lay-off and relocation of its employees (P. MacDonald, 1982). This was met with opposition by the union who negotiated to have the relocation date extended by one month to the end of August (Franke, 1982; G. MacDonald, 1982).

UKH resisted all attempts by the union and Yukon Territorial Government (YTG) to allow employees to remain in Elsa during the shutdown, raising the suspicion that Falconbridge/UKH was 'cleaning house' - that is, getting rid of some of the more radical union members who were involved in the prolonged 1980 strike - or else were wanting to let go of the older, less productive workers (Franke, 1982). This suspicion

¹The actions of UKH reflected, for the most part, the directions of its parent company in Toronto, Falconbridge. The local mine manager, for example, received notification of shutdown the day before he notified the union (Dickson, 1982).

was compounded by the fact that silver prices began to rise shortly after shutdown was announced.

According to UKH, this suspicion was erroneous on two accounts: 1) all union employees were on recall for two years; and 2) the company requires workers skilled in the old-fashioned techniques used in its underground operations and would be hard-pressed to find such workers elsewhere in Canada (Dickson, 1982).

Hence, while UKH participated in the many discussions held between various sectors, it appeared resolute in its decision to both lay off and relocate its workers. At the time of the shutdown announcement, UKH claimed that it had only \$3 million remaining in its operating budget and could not afford to retain its employees in Elsa during shutdown (Dickson, 1982).

The Union

It appears that the responses of the USWA union local #924 were concerned more with the issues of relocation and housing, than of the actual lay-offs. For while the union had compiled a list of its members' work skills for prospective employers following the first round of terminations in March, such compilation was not undertaken due to a greater concern among employees over settlement of their housing (Franke, 1982; G. MacDonald, 1982).

As mentioned above, the union was able to negotiate a one month extension of the relocation date. However, it was less

successful in its attempts to persuade UKH to allow a number of families to remain in Elsa. Interviews with union officials in both Elsa and Whitehorse, along with a review of local newspaper reports, revealed a strategy to use the media as well as political pressure to obtain this concession. However, requests for action regarding "residents being forced out of their homes" were brought up at both the House of Commons and the Territorial Legislature, in addition to a series of telexes between union executive and DIAND officials, were unsuccessful.

It was later revealed that while initially there were 24 employees who wished to stay in Elsa, many of these left during the period of housing negotiations. The union was hard-pressed to obtain additional signatures, and finally dropped the issue (Rudychuk, 1982).

The Residents

Few employees and their families were remaining in Elsa at the time of field research in late August, 1982. Most single workers had been required to leave by July 20th, as outlined in the lay-off notice contained in Appendix 3. Of those remaining, 46 were retained for maintenance work, while an additional few did not know where they were going to move to.

A handful of long-time employees had built private homes and farms in the area and planned to live in them while waiting out the shutdown. Due to seniority, they would be among the first to be recalled.

It is not clear whether those who had already left had planned for the possibility of shutdown. Interviews with those remaining suggested that this was not the case (Berg, 1982; Mease, 1982), although verification at the time was impossible.

The Governments

Essentially, the responses by both DIAND (representing the federal government) and YTG reflected their concerns with minimizing the social costs of the shutdown. Representatives of both levels met with UKH, the USWA local executive, and the local MLA to discuss the availability and implementation of assistance programs (P. MacDonald, 1982). The first meeting was held one week after the shutdown notification where it was decided to first visit Elsa to determine the residents' needs before implementing these programs. Essentially, efforts focussed on:

- employment opportunities
- vocational training
- processing of Unemployment Insurance applications
- subsidized housing in Mayo and Whitehorse by the Yukon Housing Corporation (the Territorial counterpart of CMHC)
- availability of welfare, if needed, until the U.I. benefits were available.

However, all but the processing of U.I. claims were unsuccessful. Both the company town status of Elsa and indefinite length of the mine shutdown made Elsa ineligible for the federal government's work-sharing and make-work programs

(Pearson, 1982).

Secondly, attempts at offering vocational training failed. YTG and Canada Manpower joined forces and submitted a proposal to UKH in which YTG would offer up-grading classes and an examination for a trade ticket to UKH workers. UKH refused, leaving both governments with no option as the workers would have no place to stay while taking the courses since UKH owned the housing (Pearson, 1982).

Similarly, efforts to obtain subsidized housing in Elsa as a means to retain the workforce were also unsuccessful. In response to YTG's attempts to persuade UKH to keep its houses open during the winter months, UKH agreed to do so only if YHC would subsidize the costs of heating etc. According to UKH, costs were too high for it to subsidize its housing without the mine in operation. It estimated the costs to be \$15,000 per month or approximately \$625 per house per month (P. MacDonald, 1982). Much debate was given to the accuracy of such costs and to the fact that it would be cheaper for UKH to retain its workforce for the duration of the shutdown than to relocate them.¹ Further complications arose from the fact that in order for the houses to be subsidized by YHC, CMHC would have to inspect them first (Robb, 1982).

¹Indeed, if everybody stayed, according to the figures provided to the writer by the local mine manager, heat and electricity costs were estimated to be \$1.5 million per year, whereas the costs for relocation and termination were calculated to be a little over \$2 million. In his eyes, \$.5 million was insufficient for contingency funds.

The housing issue was dropped after it was realized that most of the residents who had originally expressed interest in remaining in Elsa had already left. It appeared that few were willing to remain in Elsa during the winter months while unemployed and pay comparable rents to those in Vancouver.

Finally, the provision of welfare benefits to Elsa residents proved to be a situation in which the eligibility requirements were not properly examined prior to discussing them with the residents. Due to their high wages and levels of equity, none of the residents of Elsa were eligible for welfare.

Further confusion also surrounded the provision of housing assistance and the availability of YHC rental units elsewhere. Apparently, Elsa residents were told how to apply for housing units in Whitehorse and nearby Mayo, but were not informed that there was no vacancy in those in Whitehorse (Davies, 1982).

3.2.2 - Faro

It is more difficult to outline responses by sector to the CAMC shutdown announcement owing to the intersectoral nature of adjustments as well as the number of shutdown extensions (three) which followed the initial announcement. As is summarized in Table 3.2, a number of factors were involved in developing suitable responses to the shutdown.

First, the Territorial repercussions of the shutdown were recognized early on by DIAND and YTG; hence, their concern was not so much with the assisting of a mining operation as with the

TABLE 3.2 - CHRONOLOGY OF RESPONSES TO CAMC SHUTDOWNS

JUNE 1982	-	Mine Shutdown
JULY 1982	-	Make-work Project CAMC requests \$ 88 million in government assistance to re-open its mine
SEPT 1982	-	3rd extension of mine shutdown DIAND Minister receives Federal Cabinet approval to seek 4 party agreement on mine re-opening
OCT 1982	-	4 part pact signed between CAMC, DIAND, YTG, and USWA #1051 obtaining consensus on requirements for re-opening mine: (1) settlement of new Collective Agreement (2) development of an 'action plan' by CAMC (3) initiation by Minister of DIAND of discussion at Cabinet level of CAMC's and YTG's problems.
DEC 1982	-	Signing of new Collective Agreement between CAMC and USWA #1051
MAR 1983	-	Direct lobbying in Ottawa by Yukon 'Common Front' for re-opening of mine
APRIL 1983	-	Federal Cabinet Approval of \$50 million assistance plan
MAY 1983	-	Two year waste stripping program begins.

SOURCES: DIAND (1983a); interviews

Territorial economy. Secondly, CAMC's parent company, Dome, was involved in serious negotiations at the time with the federal government in an effort to reduce the likelihood of its total financial collapse. As a result, discussions between CAMC and DIAND were but a part of these negotiations.

Finally, CAMC and USWA #1051 were required by their Collective Agreement to enter into contract negotiations during the fall of 1982. The consequences of this bargaining would obviously have considerable effect on the economic viability of re-opening.

Responses to the shutdown initially consisted of the development of make-work projects. Before the first shutdown in June, CAMC approached the Canadian Employment and Immigration Commission (CEIC) about available options for retaining its workforce in Faro (Pearson, 1982). In conjunction with its USWA local, it submitted a community make-work proposal. This proposal was unique in the sense that it was the first 'joint-effort' proposal to be submitted to CEIC, and it was open to all Faro residents including private service sector employees. Basically, it involved a variety of community beautification projects which eventually employed a maximum of 25 people. Its success was undermined by payment delays of 6-7 weeks which led to several participants quitting in protest (Power, 1982).

As outlined in its press release (contained in Appendix 4), CAMC provided rental and heating subsidies to those laid off employees remaining in Faro following the third extension. In addition, it maintained the community recreation centre and was

involved in the offering of adult education courses during the winter (Whitehorse Star, Sept. 8 1982, p.3). In the spring of 1983, following the development of the assistance program which is discussed below, CAMC offered a relocation package (e.g., moving expenses to Vancouver or Edmonton) to those remaining but who were unlikely to be rehired. Many residents took advantage of the opportunity and left (Bazowski, 1983).

Attempts to reopen the mine involved several components, which are outlined in Table 3.2 (see page 48). In October, 1982 - some four months following the initial shutdown - agreement was reached between YTG, DIAND, CAMC, and USWA regarding the necessary conditions and sectoral responsibilities for obtaining consensus on the criteria for reopening. These included:

- the negotiation of a new union contract
- the development of a feasible 'action' plan by CAMC for resumption of its operations
- the initiation by the Minister of DIAND of discussion at the federal Cabinet level of CAMC's and YTG's problems (Globe and Mail, Oct.8, 1982, p.B12).

A new Collective Agreement which included limiting wage increases and benefits, among other items, was signed after lengthy negotiations in December 1982; while CAMC was still pressing DIAND for acceptance of its \$88 million assistance package which included the following:

- \$75 million to develop the new ore body;
- \$13 million in power and transportation subsidies;
- continued deferment of royalty payments

•continuation of the federal government's moratorium on taxation of northern benefits (Whitehorse Star, Jan.5, 1983, p.3).

Not surprisingly, the federal government was not in agreement with the amount nor the intent of this assistance request. However, between October, 1982, and early 1983, it offered no counter-proposals.

In March 1983, a delegation from the Yukon 'directly lobbied' the federal government in Ottawa requesting that the mine be re-opened. One month later, and almost 10 months after the initial shutdown, the Minister of DIAND announced Cabinet approval of a \$50 million mine re-opening plan. This two year plan is funded with \$25 million in CAMC funds, a \$19.6 million federal government loan, \$4 million from federal U.I. and NEED programs, and \$1 million from YTG (DIAND,1983a). Commencing in late May 1983, it involves a waste-stripping program, employing approximately 210.

Faced with the prospect of two of its three operating mines (UKH and CAMC) shutting down, and the third (Whitehorse Copper) closing permanently in December 1982, YTG, in May 1982, created an interdepartmental Task Force to examine their implications. Specifically, the mandate was three-fold (YTG, 1982):

- to prepare a full and comprehensive assessment of the problem
- to develop a short term economic forecast
- to propose short and long term remedial actions that might be taken by both Territorial and Federal governments to help alleviate the current and expected impacts on Yukoners.

Four 'action alternatives' were identified:

- no action
- request direct financial and program assistance from Canada
- reallocate YTG resources to mitigative policies and programs
- develop a joint Canada-Yukon action plan using the resources of both governments.

The option chosen was the last which focussed primarily on proposing joint mitigation of economic impacts through minimizing employment losses (for example, through a Temporary Relief Action Program involving the direct creation of jobs, maintenance of existing 'threatened' jobs, training, and small business contracts).

While YTG was successful in obtaining federal financial support for some of its proposals, the federal government was reluctant to invest in only short-term, 'stop-gap' measures.

3.3 - Problem Areas

According to interviews with involved actors, there were several underlying problems which constrained the development of appropriate responses to both shutdowns. Essentially, these were: limited notification, delays in implementation of remedial programs, eligibility and co-ordination problems, and conflict over roles and responsibilities.

3.3.1 - Effectiveness of Responses

The two week notification period given for the UKH shutdown, and the relative suddenness (given its economic importance) of CAMC's original notice as well as each of its three extensions, provided little time for involved parties to work out appropriate response and mitigative strategies as well as responsibilities.

While inadequate advance notice may stem in part from the limitations of existing lay-off legislation as well as insufficient provisions in the Collective Agreements, in both cases it was the parent companies which made the decisions regarding shutdowns and the speed at which they would take place.

It is obvious that the earlier notification is given regarding a closure or a shutdown, the more time there is to develop suitable responses and therefore reduce or at least mitigate its social and economic dislocation. Proponents of more stringent notification requirements argue that the mining company would be forced to consider shutdown more seriously and would perhaps seek other alternatives (Heartwell, 1982).

It has also been argued that adequate advance notification might reduce the adversarial atmosphere that tends to be generated by a sudden unexpected shutdown (Fleming, 1978). Not surprisingly, the reaction by a mining community and government to a shutdown has as much to do with the extent of advance notice and degree of consultation as it does with the actual

occurrence. For example, conflicts between UKH and USWA #924 at Elsa were heightened by UKH's two-week notice for both layoff and relocation.

Several problems relating to the eligibility and implementation of the federal government's assistance programs have already been noted above. In addition, neither Elsa nor Faro were able to make use of the Manpower Consultative Services, as this is used primarily in situations of permanent closures. Few programs for dealing with periods of indefinite shutdown and community decline were available with the exception of the job creation program under Section 38 of the U.I. Act which was ammended in December 1982 (six months after the initial shutdown) to permit projects that were mine (but not mine production) affiliated.

The assistance programs developed by the federal government are, of necessity, intended to be applicable to all unemployed Canadians, and not only to unemployed miners. This means that the social and economic dislocation experienced in a northern dependent mining community is being addressed from the same perspective as if it occurred in Vancouver. While the problems facing such communities were acknowledged at the federal level, the fact remained that the Yukon mine shutdowns happened at a time when other mining operations as well as other sectors were also experiencing lay-offs and requiring government assistance as well.

In part, the lack of appropriate programs for distressed resource communities may stem from the dearth of information on

the various ways in which mine shutdowns and community decline have been dealt with in the past. Currently, no such 'inventory' exists and, therefore, little is known about the success of strategies and programs in reducing the social and economic dislocation created by a shutdown (Haugh, 1983). Few case studies exist, with most reports of local hardships found in newspaper articles. Further, while it was proposed that a study be undertaken to determine the public costs resulting from a shutdown (E,M&R, 1981), such a study has not yet been conducted (Keyes, 1983). This lack of empirical data giving specific information on the nature, costs, duration, and frequency of shutdowns limits the appropriateness and effectiveness of mitigative measures.

3.3.2 - Conflict Over Roles and Responsibilities

In both Yukon situations, jurisdictional conflict between involved parties more often reflected power struggles over areas of control and responsibility than attempts to reduce the social and economic dislocation. For example, when it came to negotiations between YTG and UKH over actually assisting with the provision of housing, neither one would accept the responsibility, each arguing that the other bore the responsibility (Whitehorse Star, Aug. 1982).

Another example was provided by the competition between DIAND and YTG for control over social and economic matters. According to the Yukon Act, YTG has legal responsibility for social and economic concerns, while the federal government,

under the British North America Act, has jurisdiction over land, resources, and resource development in the northern Territories. In addition, the federal government, through other departments such as CEIC, provides most of the available social and economic assistance programs for distressed communities. Conflicts arose over who should be providing assistance for Faro.

Reasons for these conflicts over the issue of responsibility stem from:

- a dearth of regulatory measures which outline who is responsible for what. Such measures include labour legislation, Collective Agreements, and joint agreements between government and industry.

While certain corporate responsibilities for mitigating the costs of an industrial closure and therefore termination, have been legally defined through labour legislation such as the Canada Labour Code, there is very little attention given to the possibility of temporary and indefinite lay-offs.

Collective Agreements, while more specific in outlining corporate responsibilities for lay-offs and terminations, contain few provisions for their occurrence, beyond notification and compensation. A recent Federal Commission of Inquiry into Redundancies and Layoffs forwarded three reasons for this (1979, pp.36,97):

- until very recently, lay-offs have not been perceived by the unions as a major problem;
- government assistance in the form of Unemployment Insurance, manpower services and retraining programs have been viewed by

unions as providing adequate protection; and

- employers have negotiated higher wage settlements along with other provisions in an attempt to maintain their 'right to manage' which gives them the freedom to adjust their operations without recourse to employees, unions, or public authorities.

More recently, agreements between a mining company and the federal government (in the case of mines north of 60°) have contained clauses which outline a specific notification period for a permanent closure in addition to determining the company's responsibilities. The following section of the 1974 Nanasivik agreement illustrates such requirements:

Prior to the permanent closure of the mine due to the exhaustion of ore reserves the Company agrees to give at least twelve months notice of such closure, to the Minister.

In the event of the permanent closure of the mine it shall be the responsibility of the Company:

(a) to dispose of materials, equipment and buildings including housing, under its ownership or title, within a time period, and in a manner satisfactory to the Minister and the Commissioner,

(b) to submit to the appropriate government agencies plans and schedules for the abandonment, clean-up and restoration of the site. The abandonment, clean-up and restoration shall be undertaken in a manner socially, aesthetically and environmentally acceptable to the government agencies concerned. In the case of the tailings disposal system, the planning activities are to be undertaken before Stage 2 commences,

(c) to pay relocation costs not otherwise reimbursable for employees and their dependents having to move due to impending or actual closure of the mine and

(d) to retire fully any outstanding portions of loans, outstanding user-charges and other debts payable to Her Majesty and chargeable to the project.

As is evident, legally defined corporate responsibilities,

such as those discussed above, are minimal, and pertain primarily to the obligations of the company to its employees in such matters as notification, severance pay, and relocation. Further, they pertain to the permanent closure of the mine with no mention of obligations should an indefinite and/or temporary shutdown occur. Finally, there is no reference made to the issue of responsibility for the community and its continued existence, due to an absence of explicit policies by either the government or company as to responsibility for the mining community. While DIAND, for example, has played an important role in the development of new mining communities in the past, there is little policy guidance as to what to do with the community once the mine is shut down. Similarly, there has been no clearly enunciated policy by a mining company regarding its responsibility for a community which has been established primarily to serve the company's needs.

The reluctance by YTG, on the other hand, to give communities such as Elsa and Faro special attention is due to the fact that many of its other communities also need assistance. For example, it argues that Faro should not receive special treatment following the mine shutdown when Whitehorse, which was directly affected by the shutdown as well (due to the layoffs of those working in mine support services), would not (Heartwell, 1982).

With no clear indication of respective responsibilities in the two case studies, it is not surprising that each sector had differing perceptions of its rights and responsibilities, as

well as those of the other parties. For example, the general consensus that YTG expected CAMC to solve its own problems was supported in interviews with all parties (Byblow, 1982; Mitchell, 1982; Heartwell, 1982). The competition between DIAND and YTG over socio-economic concerns has already been noted. A third example is provided by the USWA's expectation that either YTG or UKH would provide housing for USWA's members.

3.3.3 - A Lack Of Preparedness

The UKH and CAMC shutdowns created a 'crisis-situation', not only in terms of their social and economic repercussions, but also in the response capabilities at both territorial and community levels. With response capability already limited by the relative isolation and lack of opportunities for local employment and economic diversification, the lack of preparedness appears to have exacerbated the problems generated by the high degree of dependency on a volatile mining industry. Without a pre-determined framework of responses outlining strategies, co-ordination of roles and available assistance programs to fall back on, the opportunities for effective and appropriate responses were greatly reduced. As a consequence, priority seemed to be given to developing stop-gap measures such as make-work projects and government-industry financial agreements that were intended to assist the Territory in 'hanging on' until such time that the mines resumed operations.

Despite the problems which surrounded the unexpected

closure of the Clinton Creek mine in 1978¹ and the inevitability that both Elsa and Faro will experience similar problems in the future when the mines close permanently, it appears that very little is being done to prepare for future Yukon shutdowns or closures. With the exception of YTG's policy regarding the future development of single resource towns (with strong preference for the fly-in/fly-out arrangement), no policies or guidelines appear to have been developed regarding preventative or mitigative measures for existing communities. This lack of action contrasts with the recognition by YTG of the need for

"long term measures if the Yukon is to avoid the same problems in the future. The Yukon economy, dependent as it is on a single industry sector, has for too long been at the mercy of external forces. The current problems should be seen as an opportunity for both the federal and territorial governments to develop long-term economic plans designed to broaden and strengthen the Yukon's economic base "(YTG, 1982, p.3).

Obviously, this would apply to the community level as well.

Reasons for this paucity of policy and planning measures for preparing both the communities and the Territory for possible mine shutdowns can be found, for the most part, in the attitudes and perceptions of those involved. From interviews, it was learned that planning for mine shutdowns and closures was often perceived as being difficult, if not impossible, to do,

¹This mine closed eight years earlier than was expected by both the Territorial and Federal governments. Their combined \$4 million investment into the community was viewed as a write-off. In response, a socio-economic impact was undertaken (Lerches, 1977) to, in part, determine possible measures open to the government for reducing the impact of closure. Unfortunately, these measures never materialized.

given the uncertainty over its occurrence (Rudychuk, 1982).

Others argued the need to manage a shutdown through such strategies as: controlling the extraction process as a means of reducing the possibility of shutdown and closure; economic diversification; contractual agreements which establish a specific life-span of the operation as well as the establishment of a reserve fund to offset shutdown dislocation; and finally, legislation requiring sufficient advance notification of both (Heartwell, 1982; Byblow, 1982; Power, 1982). Such suggestions coincide with those provided in the literature, where suggested impact mitigation procedures include: advance notice, job-creation programs, economic diversification, mining community reserve funds, and portable pensions (Hegadoren, 1979; Molloy and Bradbury, 1983).

These proposals offer innovative alternatives to the stop-gap measures which have been typically developed following a shutdown announcement. However, on their own, they tend to be limited in systematically preparing a community for a mine shutdown. To be effective, they should be incorporated into an overall planning framework which outlines the roles and responsibilities in each proposal. In addition, they need to be adjusted according to the particular circumstances of the community as well as to the uncertainty within shutdown.

3.4 - Summary

These two case studies have provided examples of the problems created by a lack of community preparedness for a

possible mine shutdown. The ad hoc approach employed by involved parties in both communities appeared to generate additional problems to those directly created by the shutdowns, namely, unemployment and out-migration. For example, both communities experienced conflicts between involved sectors, delays and confusion in the provision of assistance measures, not to mention a lack of appropriate short and long-term strategies for reducing the level of social and economic dislocation.

It was learned from interviews that much of the reason for the lack of planning for shutdown lay in the uncertainty inherent in the occurrence of shutdown as well as in how and who should be involved in preparing for it. In order to assist communities such as Elsa and Faro to prepare for and, therefore, manage a shutdown, the following chapters focus on developing a preparedness planning framework.

CHAPTER FOUR

A CONCEPTUAL FRAMEWORK OF PREPAREDNESS PLANNING

From the two case studies as well as from a review of the literature, it appears that mine shutdowns and closures are perceived as 'accidents' or at most, 'isolated incidents'. Such a view is reflected by the lack of planning as well as the lack of explicit policies dealing with their occurrence.

As was illustrated in the previous chapter, there is a concomittant view that planning for a shutdown and possible community decline is difficult, if not impossible, given the uncertainty over its occurrence.

However, planning for and under uncertainty is indeed possible as is demonstrated by the approach used in natural disaster planning. Here, the planning process is undertaken to deal with natural disasters where uncertainty prevails not only regarding the occurrence of, for example, a flood or tornado but also regarding the level and exact nature of the devastation it causes. Underlying such planning is the recognition that much of this devastation could be avoided or reduced through advance actions, and by approaching disasters not as 'isolated incidents' but as longer term development problems.

Contending that planning is as viable and necessary for the shutdown of a mine in a mining community as it is in disaster planning, this chapter draws on the experiences in the disaster planning field in developing a conceptual framework for preparing for mine shutdowns. It begins with an examination of

disaster planning, followed by a discussion of what can be applied to planning for mine shutdowns, and finally, offers a conceptual framework for preparedness planning.

4.1 - Natural Disaster Planning

4.1.1 - Definition Of A Natural Disaster

A natural disaster may be defined as the destructive social consequences resulting from the occurrence of a natural phenomenon such as an earthquake, mudslide, flood and tornado.

Its severity is dependent upon two factors:

- the characteristics of the particular 'disaster' agent (e.g., suddenness, duration, and frequency, which are usually uncontrollable); and
- the crisis management capability of the affected community, region or country, which is controllable (Wenger, 1978; Brown, 1979).

The consequences of a disaster are experienced by society directly, indirectly, and cumulatively through loss and injury to life and property as well as systemic disruption (Mileti, 1975; Habitat, 1983). For example, the 1970 Bangladesh cyclone killed a quarter of a million people, as many head of cattle, and severely damaged crops as a result of associated flooding (Foster, 1980, p.189). In the U.S., the estimated property damage caused by hurricanes on the Atlantic Coast between 1915 and 1970 averaged \$142 million annually (U.S. Office of Emergency Preparedness, 1972).

Impacts are also experienced in loss of economic growth and development (Habitat,1983; Brown,1979). Some of the smaller and poorer countries, such as Haiti, suffer damage as high as 15% of their GNP due to hurricanes (Habitat,1983). However, in most cases, it is impossible to calculate the loss of development momentum and of benefits from economic activity not realized as a result of a disaster.

Finally, few disaster figures contain information on the resultant higher incidence of disease, loss of housing stock, unemployment, loss of population through out-migration, among others (Habitat,1983). There is a similar dearth of information on the community impacts created by a mine shutdown.

4.1.2 - Disaster Planning Concepts

Traditionally, disasters have been viewed as 'accidents' and relief as the remedy (Brown,1979). Planning emphasis has primarily been on the provision of "relief, rehabilitation assistance, and reconstruction efforts" in an attempt to restore 'normalcy' as quickly as possible (Mileti,1975).

This approach can be described as disaster specific as well as reactive in that attention is typically focussed on developing appropriate responses for a current disaster after it has already struck.

However, this 'reactive' approach is characterized by numerous problems involving response delivery, co-ordination of involved agencies (particularly in international disasters,

where numerous relief organizations are involved), inaccurate information concerning the needs of those affected, and the inefficient use of financial resources, to name but a few problems (Brown,1979).

Within the past decade however, concern in the disaster field has broadened from disaster relief to embrace the concept of disaster planning. Essentially, this reflects a growing awareness that disasters are no longer "isolated incidents but development problems requiring "planned, co-ordinated and long-term responses" (Brown,1979,p.101). This involves developing measures for disaster prevention and disaster preparedness based on "[a]n understanding of the causative factors of vulnerability, their analyses and evaluation, and their (i.e., factors) adjustment" (Habitat,1983,p.16).

The goals of reducing the vulnerability to and losses from a disaster, as well as of being prepared for a disaster agent are central to disaster planning. In the literature, the former constitutes the framework for preventative planning while the latter for preparedness planning. Brown (1979,pp.32-34) provides the following definitions for each:

[P]reventative planning involves the formulation and implementation of long-range policies and programs to prevent or eliminate the occurrence of disasters. On the basis of vulnerability analyses of all risks, prevention includes land use, zoning, building construction regulations and settlement planning strategies.

[P]reparedness planning, on the other hand, involves developing a readiness to cope with disaster situations which cannot be avoided. This involves warning the affected population, developing an operational plan of action and an organization to

manage and co-ordinate that action, the training of personnel in rescue and relief techniques, the stockpiling of supplies and the earmarking of funds for relief operations.

4.2 - The Rationale For Disaster Planning

4.2.1 - A Increase In Disasters

The need for disaster planning stems from a marked increase in the number of disasters occurring in the world, and with this, an increase in the extent of their destruction. While this increase can be attributed to, in part, better reporting, the primary reasons appear to stem from:

- rapid population growth in disaster prone areas. In the United States, for example, the two fastest growing states (California and Florida) are vulnerable to earthquakes and hurricanes respectively. Internationally, there is a 'disaster path' which runs along the Mediterranean to the Middle East, Afghanistan, Pakistan, India, Bangladesh south to Indonesia and north to Japan (Brown, 1979). These areas are subject to recurring earthquakes, cyclones and typhoons which are, for the most part, uncontrollable. At the same time, their population is expected to increase by 50% between 1975 and 1990 (Brown, 1979);

- increasing urbanization in areas already vulnerable to natural disasters. Greater concentration of people in urban areas is seen to be a prime factor in the increasing number of deaths, as well as the extent of property losses. In fact, many of the disasters of the 1980s are viewed as 'megadisasters' as a result

of the enormous losses which they inflict. For example, as mentioned above, the Bangladesh cyclone killed an estimated 250,000 people while Hurricane Camille (1969) killed 256 people and caused over \$1.4 billion in property damage along the U.S. Atlantic coast (U.S. Office of Emergency Preparedness, 1972, p.184).

4.2.2 - A Lack Of Integrated Efforts

Settlement planning which ignores or does not incorporate an area's exposure to natural hazards only increases the vulnerability of that area to a disaster. Coupled with increased population growth and rapid urbanization, the probability of greater devastation is encouraged. Obvious examples of inappropriate settlement planning can be found in the level of development in flood plains, hilly areas which are prone to mud and rock slides (e.g., Lions Bay, B.C.), and exposed coastal areas (e.g., California). Inappropriate settlement planning is also evident during the reconstruction phase of disaster recovery when housing is rebuilt in the same location.

Recognition of disaster hazards in many countries - developed and developing - tends not to be reflected in national or subnational social, economic or spatial planning and policies (Habitat, 1983; Brown, 1979; Stott, 1979). Efforts to reduce the degree of vulnerability to recurring disasters have often been fragmented and have not reflected a comprehensive approach to disaster reduction.

Reasons for this stem from jurisdictional competition or

conflict as well as the lack of an overall planning program which binds these different levels to a common goal. For example, it has already been noted that many communities have no disaster plans which could reduce the level of devastation inflicted by a disaster agent. At the same time, they may, through local zoning by-laws, encourage increased settlement in disaster-prone areas. While such communities are reluctant to reduce their vulnerability to disasters, they are, at the same time, relying on regional and national governments for assistance once disaster occurs (U.S. Office of Emergency Preparedness, 1972).

Given the increase in the number of disasters in the past two to three decades, as well as a marked increase in the costs of public assistance,¹ such a lack of co-ordinated effort represents both an inefficient and ineffective use of financial and administrative resources.

4.2.3 - Problems in Developing a Response Framework.

While there is growing awareness of the greater vulnerability to disasters, correspondingly, there is increasing recognition of the problems surrounding the current disaster response framework. The following offers a brief summary of the

¹For example, the number of major disasters declared in the U.S. between 1953 and 1973 jumped from 14 to 46: the estimated financial assistance provided by the Federal Disaster Assistance Administration alone (one of nine federal agencies involved in disaster relief) rose from \$2 million in 1953 to \$264 million in 1973 (Mileti, 1976, p.41).

more common ones (sources include: Brown,1979; Foster,1980; Habitat,1983; and U.S. Office of Emergency Preparedness, 1972):

•Prediction And Warning Systems. In many disasters, there was inadequate warning about the imminence of a disaster agent due to non-existent forecasting systems, or forecasting systems which had already been damaged by the disaster agent.

In other situations, where a disaster agent had been monitored by tracking devices, there was no established warning system whereby the local population could be notified. Further, a lack of public education over disaster procedures has, in many countries, contributed to unnecessary injuries and deaths.

Recognition of the need for improved warning systems has resulted in the creation of numerous interorganizational programs to plan and develop such systems. For example, following the Bangladesh cyclone, the World Meteorological Organization (WMO) established a Tropical Cyclone Project which is responsible for "detecting and forecasting tropical cyclones in the SouthEast Asia region, the organization of early warning systems, as well as other aspects of disaster preparedness and prevention" (Brown, 1979,p.37).

•Organization. Brown(1979,p.25) notes that typically problems in responses to a disaster occur in the areas of a) interorganizational co-ordination in matters of financial, informational, and relief assistance operations where co-ordination has not been pre-determined. Consequences of this are

found in disagreement between involved groups over roles and responsibilities, duplication of efforts in some areas and neglect of others; and b) policy co-ordination among the various levels of governments, among their respective agencies, among international relief agencies, and among all involved organizations.

Some countries have now established permanent standing national disaster relief organizations to co-ordinate both public and private relief efforts as well as to promote the "study, prevention, control, and prediction of natural disasters" (Brown, 1979, pp. 15-17).

•Disaster Legislation. Generally, there is a dearth of legislation establishing jurisdictional responsibilities, authority, and co-operation in times of disaster. In many cases, ad hoc legislation was passed after disasters occurred and the accompanying confusion and trauma was experienced (U.S. Office of Emergency Preparedness, 1972, p. 167).

•Disaster Response Plan. A lack of established procedures, lines of authority, and relief measures, has often resulted in delays and confusion. In some cases, these have increased the severity of losses and overall costs, while affecting the length of the recovery period.

It appears that many communities which are vulnerable to natural disasters have yet to develop disaster plans, rendering them dependent and helpless should a disaster occur. In

response, the federal governments of Canada and the United States have developed a series of mechanisms (e.g., financial incentives, administrative assistance etc.) which encourage local development of such plans. For example, a Joint Emergency Planning Program was created by the federal government through Emergency Planning Canada which, in consultation and co-operation with provincial and territorial governments, undertakes and contributes to emergency planning projects which enhance the national emergency response capability. Approximately \$6 million per year is allocated for these projects (Federal-Provincial Relations Office, 1984, pp.290-91).

4.3 - Summary Of Disaster Planning Discussion

While it is unlikely that disasters will ever be 'prevented' in the true sense of the word, it is possible to reduce both the level of destruction as well as the degree of disaster vulnerability through both preventative and preparedness disaster planning. As the preceding section has outlined, this requires a commitment to developing a readiness at both national and community levels of organization. The integration of actions and efforts undertaken at these levels into an overall disaster planning framework provides the basis for more effective and comprehensive disaster management than that which is offered by the disaster relief approach.

4.4 - Implications For Planning For Mine Shutdowns

Similarities exist between a dependent mining community

which is vulnerable to the shutdown of its sole employer and a community which is vulnerable to the occurrence of a flood or earthquake. For example, a mine shutdown has the potential to create a socio-economic 'disaster' in much the same way that the occurrence of an earthquake may create a physical disaster for another community. In addition, both kinds of communities experience a great deal of uncertainty over if and when a 'disaster' agent might occur, as well as the extent of its impacts.

However, one underlying difference in the type of 'disaster' that each one experiences lies in the degree to which the disaster could have been prevented. A natural phenomenon such as an earthquake cannot be prevented from occurring, whereas the decision to shut down or close a mine could be prevented through changes in the mineral markets or preventative actions such as employee takeovers or government intervention. Recognizing that a mine shutdown could be approached by a mining community in either of two ways - prevention of its occurrence or preparation for its occurrence - the thesis focusses on the latter, contending that it is by far the most effective approach for systematically dealing with the possible loss of the community's economic mainstay.

The previous discussion on disaster planning has provided an understanding of how it is possible to plan for the occurrence of a natural disaster and ultimately, control, to a large degree, the level of its destruction as well as its inherent uncertainty. What lessons can be drawn from the

disaster planning field which would assist in improving current approaches to mine shutdowns and closures? Essentially, there are three.

4.4.1 - The Need To Prepare

In both the natural and economic 'disaster' situations, the ad hoc and reactive approach created by a lack of readiness has resulted in additional social and economic dislocation at local, regional, and national levels.

Within the mining community context, the case studies and the literature indicate the need for a mining community to prepare for mine closures and shutdown. Certainly, it is at this level where the social and economic consequences of either one are experienced most directly and immediately. Not surprisingly, it is the way in which the shutdown or closure process takes place rather than its actual occurrence that creates the most problems (Robb Ogilvie, 1981; Fleming, 1978; Manpower Consultative Services, 1982). Much of the way in which shutdown occurs depends on the attitude of the mining company. Dependency by a mining community on the 'good will' of the company reflects the underlying precariousness and unreliability of the traditional ad hoc approach to shutdown and closure. In some cases, the company exhibits a sense of social responsibility, which is reflected by adequate notification, consultation with the union and governments over the actual decision to shut down or mitigative measures, a policy of informing the community of developments in the shutdown, and adequate compensation to those

affected (Appendix 5 contains an example of this type of sensitive approach developed by Selco in its closure of its South Bay operation in Ontario).

On the other hand, there are many mining communities who do not exhibit a similar concern for reducing the 'trauma' of a shutdown/closure and who limit their social responsibilities to those outlined in existing labour legislation and Collective Agreements. As a result, the shutdown process becomes adversarial in nature and characterized by conflicts between involved sectors (Fleming, 1978).

Given these problems, it is obvious that there is a need for a community to prepare for the possibility of a mine shutdown and closure and to develop a systematic 'means' for managing the process and consequences of both.

4.4.2 - Opportunities For Managing 'Disasters'

For a dependent mining community located on the resource 'frontier', options are limited for avoiding the problems created by either a mine shutdown or its closure. However, from the discussion on disaster planning, it was learned that while a community may not have the capacity for preventing the occurrence of a disaster, it has the potential for managing and minimizing its consequences. Hence, through the allocation of roles and responsibilities as well as the development of appropriate strategies, the community has the opportunities to manage the process and consequences of a shutdown. Further, by assessing the circumstances of the community as well as

determining those impacts which are (a) totally manageable (such as temporary unemployment in the case of mine shutdowns); (b) partially manageable or capable of being influenced (such as the retention of housing for residents during periods of shutdown); and (c) uncontrollable or unavoidable (for example, uncertainty over extensions of a shutdown), appropriate strategies, guidelines, and agreements can be developed for achieving such management (Robb Ogilvie, 1981).

The process through which these measures are developed is, essentially, planning, and involves the following steps:

- goal or objective formulation/problem identification,
- an analysis of the current situation, along with opportunities and constraints,
- the development of alternatives,
- an assessment of these alternatives according to which best fulfills the established goal/objective,
- selection and implementation of this alternative,
- evaluation of the effectiveness of this alternative once it has been implemented and feedback.

This process is depicted in Figure 4.1. As will be noted, this planning process is both continuous and iterative. By this is meant that through feedback loops, the process is continuously adapting to changes in local conditions, development of new preventative measures and so on.

4.4.3 - The Need For A Comprehensive Approach

From the discussion on disaster planning as well as from

the analysis of the two case studies, it appears that a general lack of co-ordination exists among and within various levels of organization in their efforts to manage 'disasters'. It is clear that a fragmented approach is both counterproductive and inefficient. What is needed therefore, is a more comprehensive approach which integrates policies and planning at the community¹, regional and national levels. However, it is important that the planning undertaken at the community level be supported by institutional structures at the national or regional (e.g., territorial) levels. For example, policies and regulatory measures at these levels should be developed in conjunction with 'disaster' response measures established at the community level in order to achieve greater effectiveness and efficiency.

4.5 - A Conceptual Framework Of Preparedness Planning

Drawing from these three lessons as well as the definitions of preventative and preparedness planning offered above, this thesis proposes a 'preparedness planning' approach to managing mine shutdowns. This concept of preparedness planning involves the development of both preparedness and preventative measures at the local, regional, and national levels to reduce the level of dislocation of, as well as the degree of vulnerability to, the loss of a resource community's economic mainstay.

¹The community level includes all involved actors in a particular community (e.g., mining company, union, workers, governments) as outlined in Chapter One.

Accordingly, there are three levels of organization involved in actual preparedness planning: the national and territorial ('regional') levels which are concerned primarily with policy making, and the community level at which a preparedness framework and actual shutdown responses are developed.

The following section outlines the overall conceptual framework of preparedness planning. It begins with a description of what is involved at the community level, followed by an overview of the activities at the broader policy levels.

4.5.1 - Community Preparedness Planning Level

It is at this level that planning is undertaken in each community for the possibility of a mine shutdown and the eventuality of its closure. Such planning is done before either occurs and is most effective when done by those most familiar with the particular community (e.g., mining company, union, government(s), residents, and private service sector). Due to the uncertainty as to the type and timing of shutdown as well as the general economic conditions at the time of shutdown, such planning must remain general, focussing on developing strategies for managing shutdown and on allocating roles and responsibilities for when it occurs. Specifically, preparedness planning needs to focus on three areas:

- strategies for responding to an actual shutdown or closure (that is, determining who is responsible for what when either occurs;
- strategies to offset the resulting dislocation when a shutdown

occurs (that is, what projects could be undertaken during the shutdown period);

- strategies to reduce the level of vulnerability to future shutdowns or loss (either temporary or permanent) of its economic mainstay (for example, strategies for reducing community dependency on one employer, if viable).

4.5.2 - Shutdown Management Planning Level

While preparedness planning at the community level focusses on developing a general framework of readiness for a shutdown, shutdown management planning at the community level involves specific resource planning and is initiated once a shutdown or closure has been announced. It is based on the pre-determined framework established through the community preparedness planning process, but with emphasis on determining what should be done and who should do it given the particular needs and circumstances at the time.

4.5.3 - Territorial And National Policy Planning Levels

Even the federal government's direct responsibility for resource development in lands north of 60', along with the

¹Specifically, within DIAND, there is a Northern Resources and Economic Planning Branch with a Mining Management and Infrastructure Directorate. This Directorate is responsible for formulating policies, drafting legislation and regulation to 'promote orderly management and development of mineral resources in the Yukon and NWT'. In addition, it is also responsible for assessing the technical, economic, financial, and social effects of mineral projects (DIAND, 1983b, p.126).

territorial government's direct responsibility for social and economic concerns¹, there is considerable opportunity for both to develop appropriate policies for the problems created by mine shutdowns and closures. On consideration of their respective jurisdictional authorities as well as their respective administrative organizations, activities at each level should focus on developing policies which directly or indirectly require community preparedness planning. Such policies should be general in nature while, at the same time, providing flexibility for each community to develop plans appropriate to its particular circumstances. Examples of these policies are provided in the following chapter.

4.6 - Integration Of Efforts

Preparedness planning integrates all three levels of planning as can be seen from its depiction in Table 4.1. The planning process - whether policy or preparedness - undertaken at each involves a series of steps which were outlined in Figure 4.1 above. This process should be both systematic and flexible so that different government agencies and all mining communities could use it: systematic, in that it is structured and consistent; flexible, in that it needs to address and reflect

¹The Department of Economic Development and Intergovernmental Relations, and in particular, the Economic Research and Planning Branch, is responsible for formulating policy alternatives for social and economic issues affecting economic development in the Territory (DIAND, 1983b, p.188).

TABLE 4.1 - A CONCEPTUAL FRAMEWORK OF THE PREPAREDNESS
PLANNING PROCESS

	<u>LEVEL</u>	<u>PURPOSE</u>	<u>COMPONENTS</u>	<u>'ACTION-FORMING MECHANISMS</u>
F	<u>POLICY PLANNING</u> -national/ territorial level (universal application) - uncertainty	- to establish a <u>policy</u> context for community preparedness planning	- stages outlined in planning process in Figure 4.1 - establishes the requirement that actors develop preparedness plans	- legislation - regulations - incentives - agreements
E E D B A C K	<u>PREPAREDNESS PLANNING</u> - community level - (specific application, though general in nature), less uncert- ainty but future orient ation.	- community planning for eventuality of particular mine closures & possib ility of mine shutdowns;	- stages in Figure 4.1 - must incorporate: 1) long term options for avoiding loss of economic main- stay 2) shutdown manage- ment strategies for avoiding or reducing dislocation & for managing shutdown process	- contracts - agreements - persuasion - plans - networks - flow charts
	<u>SHUTDOWN MANAGEMENT IMPLEMENTATION PLANNING</u> - community level - very specific immediate, certainty	- community planning specific responses to particular shutdown or closure once it actually has been announced	- who should do what specifically when shutdown/closure o ccurs - same stages as in Figure 4.1 for gener- ating 'emergency response' actions	- actions

the particular circumstances, needs, and opportunities of each community and at each level of government.

Its overall structure is characterized by its iterative nature where 'feed-out' and 'feed-back' among these levels creates an on-going learning process which, ultimately, should result in a more comprehensive approach to mine shutdowns. As an example, a community could provide policy-makers with specific information regarding the effectiveness of certain policies in assisting in the management of shutdown impacts.

As a result, uncertainty is reduced as one moves from the policy level where 'possibilities' which contain a good deal of uncertainty as to place and time must be addressed, to the shutdown level where specific plans must be formulated for a known place and time. The future horizon addressed at each level is brought forward as one moves from the most general (i.e., policy) planning level to the most specific (response implementation) planning level.

4.7 Summary

This chapter has developed a conceptual framework of preparedness planning for mine shutdowns in an attempt to create a more systematic approach to their management than is offered by the ad hoc and reactive one.

While the policy and management planning levels are as important to the overall effectiveness of the preparedness

planning approach as is community preparedness planning, it is the latter that the thesis is primarily concerned with, and hence, it is that level which is the focus of the following chapter.

CHAPTER FIVE

PREPAREDNESS PLANNING AT THE COMMUNITY LEVEL

Dependent communities such as Elsa and Faro, which are faced with uncertainty over the life-span of their economic mainstay, and consequently, their own life-span, have done little planning to deal effectively with it. Typically, this uncertainty has tended to evoke a response of 'unable to plan' rather than a recognition of the need for a particular type of planning process. This has been reflected not only by a dearth of plans in response to actual shutdown (e.g., who and what should be involved in addressing the community needs following shutdown notification), but additionally, by an absence of preparedness planning for the possibility of shutdown and the inevitability of closure.

It is highly probable that Elsa and Faro will once again experience the loss of their economic mainstay. Should neither community develop a readiness for this loss, it would seem likely that they will experience a recurrence of those problems recently encountered: conflict over roles and responsibilities, and inadequate assistance measures.

However, by undertaking a more systematic and planned approach to the possibility of such a loss, both communities would be able to reduce, to a large degree, the social and economic dislocation which it creates as well as continued vulnerability to further losses (temporary or permanent) of their economic base.

The preparedness planning framework outlined in this chapter provides communities such as Elsa and Faro with a basis for understanding not only of who and what should be involved in developing community readiness for the occurrence of shutdown and closure, but also what the requirements are for developing greater self-sufficiency in the long run.

Expanding on the preparedness planning framework outlined in the previous chapter, this chapter begins with a description of each step in the actual planning process, followed by a discussion of who should be involved in the planning, and how. The chapter concludes with an overview of various mechanisms for implementing this process.

5.1 - Preparedness Planning: The Process

5.1.1 - Goal Establishment/Problem Identification

A mining community undertaking preparedness planning should begin with a recognition of the strong possibility of future decline, given the inevitability of mine closure as well as the possibility of indefinite and temporary shutdowns.

In addition, goals regarding the future of the community should be established; that is, does the community want to continue existing once the mine has closed. For company towns such as Elsa, continued existence may not be an option permitted by the mining company. However, other mining communities with municipal status, such as Faro, should determine whether continuation should be a goal. As well, the goal of minimizing the trauma which has typically accompanied shutdowns in the past

should also be articulated.

5.1.2 - Situation Analysis

Once a community has decided that its continued existence is desired, it needs to determine the feasibility of achieving this goal. An analysis should be made of the opportunities and constraints for achieving such goals. A number of political, social and economic variables need to be assessed, including location, community status, employment opportunities, economic diversification alternatives, housing availability, availability of assistance programs, general policies on notification, company policies, and strategies used by other mining communities. In addition, possible impacts - social and economic, short- and long-term - for all three types of shutdown (and possible extensions) need to be determined.

While such analysis provides the community with an inventory of information concerning available resources and problem areas when establishing strategies for offsetting periods of cyclical shutdown, the analysis is also critical in determining whether continuation of the community is possible once the mine closes or whether it is highly improbable.

It is important, however, that these alternatives reflect the actual conditions and situation of the mining community, rather than wishful thinking. For example, opportunities for the economic diversification of Uranium City were dismissed by consultants commissioned by a local task force for five major reasons (Wolfe, 1982, p.92):

- the time lag in getting a project going;
- the limited market opportunity;
- social unacceptability of some of the proposals (for example, a detention center, a nuclear waste site);
- locational disadvantages in terms of transportation costs; and,
- few jobs would be created, or else jobs would not be created for a population not appropriately trained.

5.1.3 - Generating Alternatives

In the previous chapter, it was noted that a community should prepare for a shutdown in three ways:

- strategies for avoiding the loss of an economic mainstay, if possible;
- strategies for offsetting periods of indefinite shutdown; and
- a response framework for when shutdown does occur.

Within each area, alternatives should be developed, if possible. The purpose of generating alternatives for the three areas of preparedness is to determine ahead of time the requirements for responding effectively to the possibility of a shutdown, and to minimize its community consequences. Four basic components should be reflected within each alternative:

- purpose, objectives, and priorities;
- legal authority and allocated responsibility;
- organization and co-ordination of involved sectors and their responsibilities; and
- available financial and administrative resources.

Inherent in their development is the determination of roles and responsibilities. In addition, recognition that a 'staged response' may be needed must also be incorporated into these alternatives. This staged response refers to the uncertainty within temporary and indefinite shutdowns, which should be incorporated in each alternative in order to respond immediately to shutdown extensions or situations where a shutdown eventually becomes a closure.

•Dependency-Reduction Alternatives

These are essentially preventative strategies for avoiding dependency on one economic mainstay should the situation analyses in Step 2 indicate such opportunities exist. Their development requires, first of all, consensus among involved parties as to the continued existence of the community once the mine has closed permanently. This demands that thought be given not only to future economic opportunities, but more importantly, to the degree of future commitment to the community. While it is unrealistic to expect residents to commit themselves to living in a mining community for ever, it is necessary to ensure that future government and resident commitments to the community are realistic. By this is meant that a government requires a certain level of population to warrant provision of services and financial support; likewise, the residents need to know that such provisions would be made.

Should there be a lack of interest in long-term residency

by the majority of the residents, and, more decisively, support by the government, attention should be directed toward developing a well-thought-out closure process. However, if there appears to be sufficient support for developing the long-term viability of the community, then planning should be undertaken to develop an alternate economic base.

While it is beyond the scope of this thesis to discuss in detail the conditions for economic diversification, several important variables which determine the potential for effective economic diversification have been identified through the experiences of Atikokan, a former mining community in Ontario. These variables are:

- lead time (from Atikokan's experience, it takes from three to five years to implement new industry, and between eight and ten years to locate an alternative economic base capable of sustaining 1,000 jobs);
- designation of a party with explicit responsibility for economic diversification (e.g., an economic development officer or committee);
- role of senior governments in terms of attitudes, programs, and support (that is, would assistance be provided for such attempts?); and,
- community resources and attitudes (e.g., demonstrated commitment and leadership) (Intergroup Consulting Economists Ltd., 1982, p.s-2).

A list of diversification opportunities proposed by the mining communities of Uranium City, Atikokan, and Thompson, is

contained in Appendix 6.

•Cyclical Shutdown Preparation Alternatives

There is also a need to develop alternatives to offset periods of shutdown. For example, a stockpile of make-work projects could be created in advance which reflects the needs of the community and which could be implemented on short notice. One such area involves environmental clean-up programs to rehabilitate some of the area destroyed by mine tailings (Bradbury and Wolfe, 1983). A similar 'greening' program was initiated in Sudbury as a means of creating jobs during lay-offs (R. MacDonald, 1983). Such a stockpile would have been very useful for Faro during the period of its mine shutdown. The possibility exists that an insufficient number of projects could be created by repeated extensions of a shutdown, as was the case with Faro; however, this could be rectified by creating projects which are short-, medium-, and long-term in nature.

•Closure Preparation Alternatives

These types of alternatives address ways of reducing social and economic dislocation, should either periodic shutdown or a permanent closure occur. For the most part, they should be concerned with generating fair and equitable agreements among involved actors, to minimize unnecessary trauma. As an example, an agreement could be undertaken between the mining company and the community, outlining steps to be taken by the mining company in the event of a shutdown.

5.1.4 - Assessment And Selection

Once identified, the options for each of the three areas of preparedness need to be assessed against (a) community goals and (b) opportunities and constraints. Those alternatives selected for preventing the loss of an economic mainstay, and for offsetting periods of temporary or indefinite shutdown, need to be implemented as soon as possible, to benefit from sufficient lead time. However, selection and implementation of shutdown management alternatives must obviously wait until a shutdown actually occurs, to determine which alternative is most appropriate for the particular circumstances at the time.

5.1.5 - Evaluation

To determine the effectiveness of a selected alternative for each of the three areas of preparedness plans, an evaluation of it should be undertaken after a shutdown or closure has occurred and the preparedness plan has been put into action through the shutdown management plan. Such evaluation is useful for the community as well as others in ascertaining whether the strategies are viable and effective.

5.1.6 - Feedback

Of absolute importance to the long-term success of the preparedness planning process is the need for feedback, both between and within each step. Basically, this requires a continual examination of the planning process and its results, and involves developing an iterative process whereby that which

is learned is incorporated into future preparedness strategies and into adjusting, if necessary, the planning process.

5.2 - Roles And Responsibilities

Each of the involved actors in a mining community has a role to play in preparing for mine shutdowns, both sectorally (or, in the case of the residents, individually) and collectively, as involved participants in a mining community. To develop this 'collective responsibility,' a structure should be established for allocating roles and responsibilities with respect to the community needs and for undertaking preparedness planning. First, however, it is necessary to determine what some of those responsibilities might be for each sector, given their respective resources and jurisdictions. While the actual responsibilities of parties should be determined according to the particular circumstances of each community, the following section suggests some responsibilities of these sectors for preparing for shutdown.

5.2.1 - The Governments

As mentioned earlier in the thesis, both the federal and territorial governments are involved in a mining community; with the federal government promoting and facilitating resource development projects in Territorial lands, while the territorial government is involved in their social and economic development. Essentially, both governments formulate policies and administer programs for these communities. For example, in Faro, YTG

provides educational services; while the federal government provides such health services as a nursing station.

The governments are involved directly in the community through provision of these administrative services. Policy formulation, however, occurs at a geographic distance - primarily in Whitehorse and Ottawa - and at a general level - primarily at a regional and national policy level. Not surprisingly, there is not the same direct contact between the community and policy-makers as there is between the community and local government personnel involved in the provision of services. Hence, policy-makers in both governments may be more isolated from the specific needs of this type of community.

While this isolation reduces the ability of the two levels of government to provide substantive input into community preparation for mine shutdowns, their respective jurisdictions place them both in positions to ensure that a community preparedness planning process is implemented. The support of the national and territorial levels of government is of utmost importance to the success of the community preparedness planning effort. Various options for providing such support are discussed below in section 5.3.

5.2.2 - The Mining Company

Traditionally, it has been the mining company which has been responsible for a mining community. However, increased involvement by governments in the creation, operation, and financing of these communities has changed the nature of the

role and responsibilities of a mining company for its dependent community.

While interviews with various mining company officials revealed that responsibilities of a mining company are first to its shareholders and workforce, and secondly, to the community and governments, it has certain obligations for ensuring that a is prepared for shutdown. Given its knowledge of its financial situation, the trends in the international mineral markets, and the life expectancy of the ore body, it is proposed that the mining company be involved in assisting community preparedness planning in the following ways:

- the company should give as much advance warning as possible of its intentions to either shut down or permanently close its operations. While it has already been recommended that the period for notification be established through legislation of other formal measures, it is forwarded that the mining company try to give even more time. It is recognized that many companies may be constrained in doing so for several reasons. In the case of a shutdown, a locally based mining community may not know until the last moment, since the decision is often made by the Board of Directors of its parent company (as was the situation in both case studies). However, while it is not known what a Board decides until it acts, once decided, the Board should be required to give sufficient time for the community to prepare. Other problems include the possibilities that disclosure of their plans might give an unfair advantage to their competitors; and finally, that their workers might leave prior to the actual shutdown or closure. However, it is contended that such

notification is essential to developing specific responses to the actual occurrence of either.

- that the mining company, in addition to the terms contained in its Collective Agreement, contribute to the costs of interim stability programs or economic diversification planning through administrative and/or financial assistance. This proposal is predicated on the fact that since the mining community was created to serve the interests of company, it follows that the company 'pay its way out' by means of such assistance. In future, this would mean that the costs of shutdown and closure would be incorporated into the overall project costs.

- the mining company should incorporate into its Collective Agreement an outline of its responsibilities regarding company housing, rental subsidies, and employment programs during periods of temporary and indefinite shutdown. Such provisions might have reduced the level of conflict which was created following the shutdown at Elsa.

While several mining companies have already incorporated some elements of planning into their agreements with their work force, any external imposition of such responsibilities could be resented by the company. However, such requirements are intended to establish a minimum standard of responsibility rather than supplant a mining company's private initiatives.

5.2.3 - The Union

The union, through negotiations over its Collective Agreement with the company, should attempt to develop a

readiness for possible shutdown and closure in the following ways:

- it should initiate discussions with the company over such issues as the above-mentioned housing and rental arrangements during periods of shutdown.
- it should be responsible, with support by the company and two levels of government, for developing a stock-pile of make-work projects to be undertaken during periods of shutdown.

5.2.4 - The Private Service Sector

Since this sector is not involved with the actual mining operations, it follows that they are usually the last to be informed about a mining shutdown and/or closure. Hence, in developing a readiness for the possible occurrence of either, it is suggested that the private sector, prior to establishing their business, be responsible for ascertaining through discussions with the mining company and involved government officials, the expected life-span of the mine, as well as the availability of company and government assistance in the event of a shutdown. Further, a liaison between the private service sector and the mining company should be established to keep abreast of developments in the mining operations, and with the government to encourage the development of possible assistance programs.

5.2.5 - The Residents

It has been noted that "the inevitability of mine closure and shutdown is often treated with complacency by the community and its residents if things seem to be going well" (InterGroup Consulting Economists, 1982,p.2). The prime responsibility of the residents in preparing for possible shutdown is to do just that - prepare both for the periods of possible and eventual unemployment, and for the eventual loss of community housing. Personal strategies such as savings and second home purchases provide some insurance for residents against the effects of a shutdown. If economic diversification is feasible, residents who wish to remain in the community once the mine has closed could initiate community development projects, such as developing local tourist facilities.

5.2.6 - Organization Of Roles: The Intersectoral Committee

Who should do the actual preparedness planning? Should it be a single person or agency? Or should all parties be involved?

It is proposed that preparedness planning be undertaken by all parties involved in the community through an intersectoral committee comprised of representatives of each sector, and not merely the mining company, union, and governments. Such a suggestion is based on the rationale that an external agency or person may not be capable of addressing the concerns of all parties in developing a readiness. Further, and perhaps most importantly, by involving all parties in such planning, the fulfillment of their sectoral responsibilities is more likely.

Since one of its functions is to serve as a co-ordinating committee, emphasis must be on developing a consensus over suitable strategies for the community. Traditional sectoral disputes such as union/company disagreements should be dealt with in other arenas.

5.3 - Implementation Of The Preparedness Planning Process

Successful implementation of the preparedness planning process depends upon the support, co-operation, and involvement of all parties. The federal and territorial governments play a key role in implementation - obviously, a policy decision must be made by government to create the requirements for preparedness planning.

It is highly unlikely that leaving it to be done on a voluntary basis will result in a community readiness for shutdown. First of all, it is doubtful that all parties would feel responsible or concerned enough to undertake such planning; and second, even if there were a strong interest shown in assuming the responsibility on a voluntary basis, it is highly improbable that such interest could sustain itself over a long period. This has been demonstrated repeatedly in natural disaster situations, where, once 'normalcy' returns, the interest in planning for possible disasters dies.

What is needed is a more structured approach to implementation, including, for example, the development of formal measures such as legislation, regulations, or binding

agreements. Examples of legislation might include the official designation of mining communities as 'special' communities or districts which require the development of preparedness plans for the possible loss of an economic base.

Regulations could include the establishment of planning and monitoring requirements for social (community) aspects of a mining project, similar to requirements already established to deal with environmental concerns. This could be accomplished for new mining projects by establishing preparedness planning as a condition in required licences, permits and approvals; these requirements could be extended to existing projects as permits and approvals are renewed.

Agreements similar to those used in the creation of new mining communities could be developed to ensure preparedness planning is undertaken for the possible loss of the community's economic mainstay. For example, the agreement between the province of Manitoba and Sherritt-Gordon for the creation of Leaf Rapids allocated responsibilities for the social, economic and physical components of the community; however, it did not address responsibilities associated with shutdown.

While formal measures are essential in ensuring that preparedness planning be undertaken, they may be viewed with a great deal of resentment and opposition by some of the involved parties and, in particular, the mining companies. Certainly, these measures would be viewed as an unwelcome intrusion in the companies' 'right to manage'. At the same time, given that the very need for preparedness planning stems from the fact that

many mining companies have not been as responsible as they might have in reducing the social and economic dislocation, it remains that a certain amount of legislation is required to ensure a minimum level of responsibility.

The success of the preparedness planning process in developing a community readiness for shutdown will be ensured only if there is a willingness on the part of all parties rather than a resentment over being forced to do so.

With this in mind, another alternative, essentially persuasive in nature, is the use of incentives or disincentives, usually financial, to encourage sectors to fulfill their responsibilities in developing community readiness. Such a 'carrot' approach might involve such incentives as subsidies, taxation gains or increases, and grants - a more positive inducement than the imposition of formal measures. Further, this persuasive approach could be more effective in encouraging existing mining communities to undertake preparedness planning. While it may be argued that such an approach is costly, both in terms of incentives paid out and revenues foregone, it may likewise be argued that such costs are offset by the increased efficiency and effectiveness of shutdown management at the community level.

While it is beyond the scope of this thesis to ascertain which approach to preparedness planning implementation is preferable, as the best alternative varies with local community conditions, the incentives approach, based on persuasion rather than formal measures, appears to be the more viable in

encouraging the undertaking of preparedness planning in existing communities. Although the incentives-based approach incorporates an element of choice, it nonetheless encourages community-wide participation. This provides the broad community support required for effective preparedness planning.

CHAPTER SIX

AN APPRAISAL OF THE PREPAREDNESS PLANNING APPROACH

This thesis has outlined a preparedness planning framework which can be used by a dependent mining community to develop a readiness for the possibility of an indefinite or temporary mine shutdown and the inevitability of a permanent one. Its purpose has been to provide the community with a 'means' for addressing and managing the social and economic impacts which are created by the loss (temporary or permanent) of its economic mainstay and which could culminate in its decline. While preparedness planning does not necessarily prevent either a shutdown or closure from occurring, it offers a more systematic approach to their occurrence than that which is provided by the traditional ad hoc approach. As a way of summarizing the over-all discussion of preparedness planning, an appraisal of its limitations and value is offered.

6.1 - Limitations

While it is argued throughout the thesis that the preparedness planning approach will reduce the problems created by the ad hoc approach to shutdown, it would be unrealistic to imagine that it is without its own limitations.

First, the preparedness planning approach requires that special consideration be given to the needs of resource communities such as mining towns. However, governments may be reluctant to give such preferential treatment to this type of community particularly when other non-resource communities may

be simultaneously and adversely affected. For example, Yukon government representatives questioned the equity of giving Faro special treatment at the same time while ignoring Whitehorse which was similarly affected. In response, it may be argued that such consideration is necessary to offset unnecessary social and economic costs and that perhaps Whitehorse should also undertake preparedness planning. This is particularly important when a mine is the economic mainstay of the surrounding region.

Secondly, there is a very real possibility that the intersectoral committee which has the responsibility for preparedness planning may lose interest and momentum before a shutdown or closure has occurred. In many instances, several years may pass before either one might happen, creating a sense of complacency. Further, for those communities with no foreseeable long-term viability, the rationale for preparedness planning might appear non-existent. However, it is precisely at these 'lulls' that preparedness planning can be undertaken, for with sufficient time, appropriate short and long-term strategies should be developed.

Thirdly, while the implementation of the preparedness planning process could be legally required in cases of new mining projects for which a new community must be constructed, similar requirements for existing communities may prove more problematic, even with sufficient incentives or disincentives. It is possible that some communities may not want to prepare, while in other situations, conflict between involved parties may seriously undermine the effectiveness of the process. For

example, it is possible that the mining companies may seriously object to the imposition of a responsibility, believing that consultation between itself and its union is sufficient. With this in mind, it is suggested that incentives and disincentives be developed in such a way as to address the specific needs of the community and its residents, thereby, offering greater 'inducement' to prepare.

Finally, the development of a preparedness planning approach within a void of clearly defined national and subnational (territorial) policies in the areas of community, regional, and resource development raises the question as to whether preparedness planning is merely another 'band-aid' solution to the more complex and over-riding problems created by current resource investment policies and economic dependency.

Further, the lack of clear policies in government departments such as DIAND which have a dual mandate of promoting and encouraging resource development on the one hand, while mitigating the social and economic costs on the other, may serve to constrain those communities attempting to develop a readiness for the termination of such projects. What assistance they might provide to these communities results in first aid being offered to the victims of an economic disaster, while permitting the 'disaster' to continue to create victims.

6.2 - Value

The value of the preparedness planning approach is found primarily in procedural terms: that is, preparedness planning as

a 'means' for addressing the many community problems associated with a shutdown and/or closure.

First, it helps to reduce the 'crisis' type of atmosphere which so often surrounds shutdown. It does this by promoting a readiness for it through a more rational, organized, and systematic process. At the same time, it provides an avenue for creative measures to be developed by those involved. For a dependent community, this serves as an opportunity to develop community reliance.

Secondly, by assessing the efficacy of available assistance programs before-hand, problem areas and inadequacies are identified, as well as the type of assistance and programs needed in both the short and long-terms. This could lead to a more efficient use of administrative and financial resources, a vital concern during the current period of restraint.

Third, preparedness planning provides a process for defining responsibilities for a) the costs of shutdown which have traditionally been assumed by the mining community and the public at large, and b) the planning for the needs of a dependent community faced with the loss of its economic mainstay. By involving all sectors of a mining community, a readiness can be developed which reflects a wide spectrum of needs and not just those directly affiliated with the mining operation.

Further, preparedness planning provides the necessary framework in which the true costs of a shutdown can be addressed

and from which informed trade-offs can be made between involved parties. By involving all those parties who are affected by a shutdown, the process encourages the identification of a wider spectrum of needs, costs, and opportunities.

Finally, preparedness planning may result in improved resource community planning through focussing attention on the need to prepare for the possible loss of an economic mainstay and for managing as well as reducing the uncertainty over and within the life-span of the community. The development of a more systematic and planned approach to shutdowns and closures could result in policy changes, initiated at senior levels of government, regarding the type of resource community built in the future as well as greater support for existing communities wishing to diversify their economic base. However, for such policy changes to take place, planning for shutdown must become an integral component of the resource community planning process in the same way that planning for resource community creation and maturation already is.

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APPENDIX 1 - LIST OF INTERVIEWSWHITEHORSE

Barrie Brickman - Senior Advisor, DIAND (Northern Development)
 Maurice Byblow - MLA, Faro
 Peter Fairman - Planner, YTG (Economic Review & Planning Unit)
 Dave Gairns - Local Government Advisor, YTG (Municipal Affairs)
 Colin Heartwell - Director, YTG (Economic Review & Planning Unit)
 George Lerches - Regional Manager, DREE
 Piers MacDonald - MLA, Elsa and Mayo
 Cam Ogilvie - Assistant Director, DIAND (Non-renewable Resources)
 Judy Pearson - Manager, CEIC (Employment Development Branch)
 Barrie Robb - Manager, Yukon Housing Corporation
 Bill Rudychuk - Yukon Representative, USWA
 David Waugh - Manager, Yukon Chamber of Mines

ELSA AND MAYO

Konnie Berg - Personnel Manager, UKH
 Dr. Clark - Doctor, Mayo
 Sue Davies - Social Worker, Mayo and Elsa
 Tom Dickson - Mine Manager, UKH
 Heiko Franke - President, USWA Local #924
 Nelson Ireland - Principal, Mayo
 Graham MacDonald - Acting President, USWA Local #924
 Ralph Mease - Miner, UKH

FARO

Eleanor Carrington - Housewife
 John Carrington - Mine Manager, CAMC
 June Hampton - Businesswoman
 Rennie Mitchell - Mayor
 Dave Power - President, USWA #1051
 Mike Rawlings - Former employee, CAMC

(FARO cont'd)

Jeanne Wilson - Teacher

George Wight - Chief Accountant, CAMC

OTTAWA

Robert Keyes - Director, Energy, Mines and Resources
(Human Affairs Division)

Joseph Lazarovich - Acting Director, DIAND (Mining
Management & Infrastructure Directorate)

Robert Shanks - Director, E,M &R (Resources & Development
Division)

Roger Simard - Project Manager, DIAND (Northern Program
Planning)

VANCOUVER

O.W Fox - Industrial Relations Superintendent, AMAX of
Canada Limited

A.J. Petrina - Senior Vice-President, Placer Development
(Operations)

Peter Womersley - Manager, Placer Development (Employee
Development and Compensation)

APPENDIX 2 - PROVISIONS IN COLLECTIVE AGREEMENTS FOR MINE SHUTDOWNS AND CLOSURES

1. UKH

6.09 Lay-offs

a) Whenever a reduction of the work force is necessary the Company shall give the employees concerned two weeks notice or 80 hours pay at their applicable basic rate in lieu of such notice except in the case of temporary reductions due to breakdown, accident or other emergencies making the giving of such notice impossible.

b) Where, as a result of a temporary reduction as referred to in 6.09 (a) an employee is unable to work for a minimum of five (5) days in a fourteen (14) day period, he shall receive the sum of Five Hundred Dollars (\$500.00). If, following receipt of the above sum, the employee is or elects to be laid off, he shall not then be entitled to the notice and pay-in-lieu provisions of 6.09 (a). This shall be the only situation in which an employee can elect to be laid off. An employee not laid off, but unable to work, shall receive room and board or housing at the regular rates.

6.11 Permanent Shut-down

a) The Company shall give to the employees concerned, with a copy to the Union, at least three (3) months written notice of a planned permanent shut-down of all Company operations in the Elsa-Keno area, Yukon Territory, that will result in termination of employees by the Company.

b) An employee who remains working at his assigned position until terminated by the Company will qualify for payment of severance pay of One Hundred Dollars (\$100.00) for each completed three-month period of employment, calculated from his most recent date of employment if:

(i) he has remained continuously on the payroll of the Company since the date the notice referred to in (a) above was given until his release by the Company,

(ii) he has been continuously in the employ of the Company for six (6) calendar months prior to his release by the Company.

c) Relocation assistance will also be provided to an employee who remains working at his assigned position until terminated by the Company, providing he actually moves out of the Keno, Elsa, Mayo area.

An employee who terminated his employment or who is discharged for just cause following notice of the planned permanent shut-down referred to in (a) above, but prior to completion of his assignment will not qualify for any location assistance. Where husband and wife are both employed by the Company, only one employee is entitled to receive relocation assistance.

If relocation assistance is provided in whole or in part by any Governmental Agency and/or another employer, the Company will only be obliged to make up any shortfalls to the maximum stipulated in the relocation assistance programs.

d) Relocation assistance will apply to the destination chosen, but not beyond Vancouver or Edmonton, as follows:

(i) One way economy air fare for the employee and for the spouse and children if resident in the Mayo-Keno-Elsa area.

(ii) After written quotations have received Company approval, the Company will provide the

cost for the services listed below:

1. Packing and transporting of household goods.
2. Transporting of boats and snowmobiles within reason.
3. In-transit insurance.
4. Bunkhouse items.

(iii) An employee who does not otherwise qualify for incoming transportation refund pursuant to Article 17.01 or 17.02 but who qualifies for relocation assistance will be deemed to qualify for refund pursuant to Article 17.01.

e) The Company and the Union agree to establish a Manpower Consultative Services Committee under the auspices of Canada Manpower. The Committee will be established and become functional upon notice from the Company to the Union that shut-down of operations would take place.

Such notice to the Union would be given and the Committee would become functional no later than the issuance of the Company's notice to employees referred to in (a) above.

The prime function of this tripartite Committee will be to assist employees in securing alternate employment at the time their employment is terminated in Elsa.

2. CAMC

8.11 Permanent Shutdown

1) In the case of a permanent layoff or shutdown of the Company's operations resulting in the termination of an employee's employment, the Company will give:

(a) Two (2) weeks notice in writing to the employee if his period of employment is less than one (1) year;

(b) One (1) month's notice in writing to the employee if his period of employment is one (1) year or more but less than two (2) years;

(c) Two (2) months notice in writing to the employee if his period of employment is two (2) years or more but less than five (5) years;

(d) Four (4) months notice in writing to the employee if his period of employment is five (5) years or more, but less than ten (10) years; and

(e) Six (6) months notice in writing to the employee if his period of employment is ten (10) years or more.

2) Where the notice referred to in Subsection (1) has been given:

(a) no employer shall alter the rates or wages or any other term or condition of employment of any employee to whom notice has been given; and

(b) upon expiry of the notice, the employer shall pay to the person, the wages and any unpaid holiday pay to which he is entitled.

3) Notwithstanding Subsection (1), the employment of an employee may be terminated forthwith where the employer gives to the person notice in writing to that effect, and,

(a) pays to the person an amount equal to the wages to which the employee would have been entitled for work that would have been performed by him at the regular rate for a normal non-overtime work week for the period of notice as above in Subsection (1), and,

(b) pays to the employee any unpaid annual holiday pay to which the employee is entitled under this Agreement.

4) The Company agrees to provide transportation for the employee and his family and all household goods to a destination of their choice but in no event beyond Edmonton or Vancouver. In the event any government agency provides the above assistance, the government will be the first payer with the Company providing any remaining amount.

APPENDIX 3 - UKH LAY-OFF NOTIFICATION

UNITED KENO HILL MINES LIMITED

Elsa, Yukon
Y0B 1J0

June 30 1982

United Steelworkers of America
Local 924
ELSA, Yukon Territory

Attention: Mr. H. Franke, President

Dear Mr. Franke:

Re: Lay-Off - General Conditions

1. Laid-off married status employees occupying a Company residence (not residing in a bunkhouse) may continue to occupy their residences, rent free, until August 31 1982 at which time they will be required to vacate.
2. Laid-off employees residing in a bunkhouse may occupy their accommodation up to and including July 20 1982, following which they will be required to vacate.
3. Laid-off employees entitled to board and lodging may retain cookhouse privileges July 14, 15 and 16 1982. Purchase of meal tickets will be necessary thereafter.
4. Laid-off employees may continue to use the facilities of the Elsa Market to make reasonable purchases for themselves and their dependants only.
5. Laid-off employees who were absent from the area on authorized holiday or leave during normal notice period, will receive 80 hours pay in lieu of notice.
7. The Company agrees to supply bus transportation to laid-off employees to Whitehorse between July 14 and July 16 1982.

APPENDIX 4 - NOTIFICATION OF THIRD SHUTDOWN EXTENSION: CAMC

Text of Anvil statement

This is the text of the announcement from the Cyprus Anvil Mining Corporation extending the mine shutdown in Faro:

Cyprus Anvil Mining Corporation announced today it will extend the current mine shutdown period of the company's zinc-lead-silver mine in Faro until spring, 1983.

The decision comes after several months of efforts by company officials to achieve significant productivity gains and a reduction of power rates, transportation and infrastructure costs in response to adverse economic conditions.

The company plans to continue consulting with the federal and Yukon governments and other parties to resolve these problems and facilitate the mine reopening.

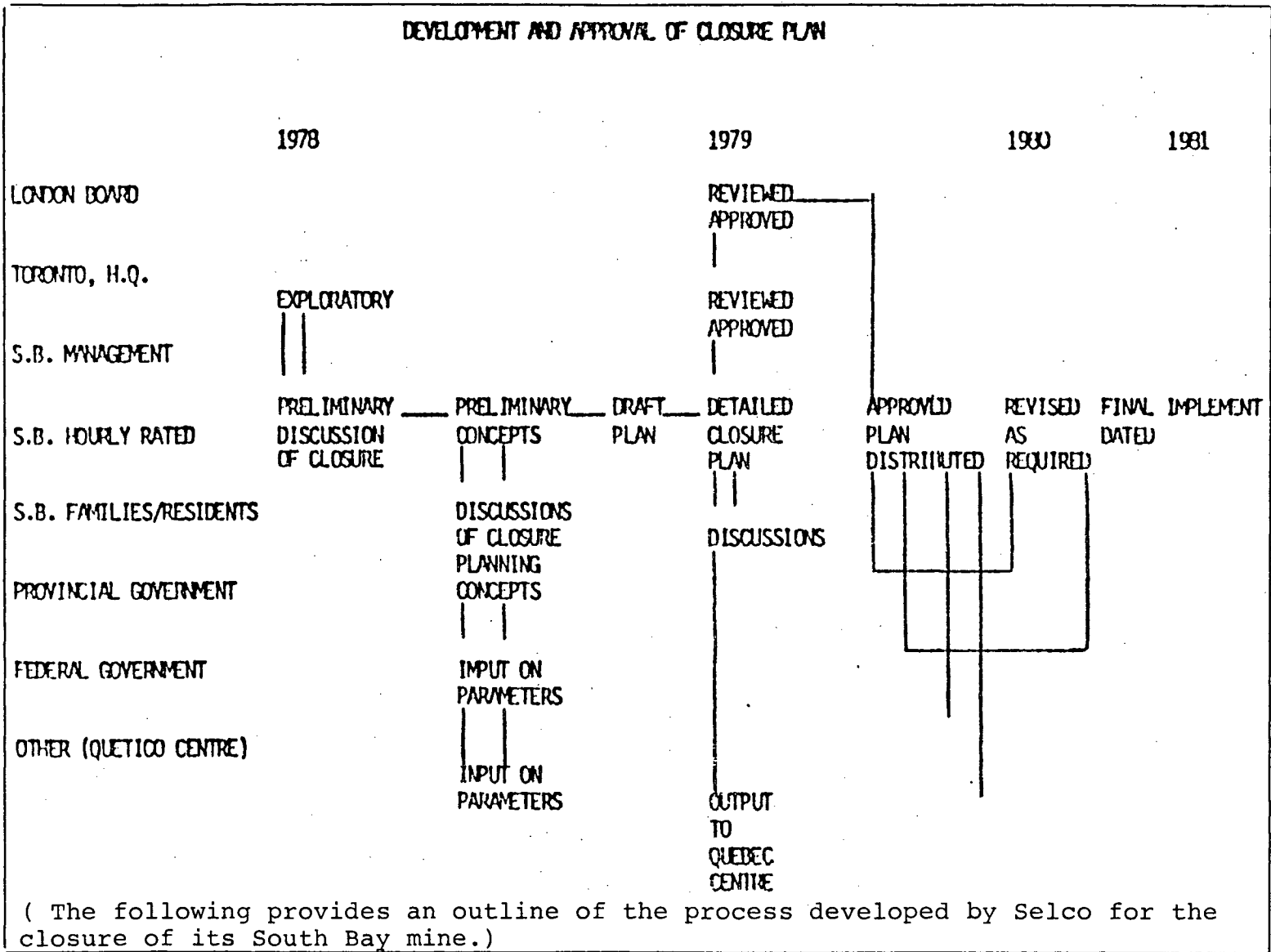
Through the winter months a number of Cyprus Anvil employees will continue to be employed on various mine projects.

These employees, as well as laid-off employees, living in subsidized, self-contained units in Faro, will be permitted to remain in their company housing under the existing housing program. This program includes subsidies for rental, home heating, electrical power, and major maintenance work.

The company will also keep the town's recreation centre functioning.

These measures will result in a cost to the company of approximately \$1 million per month through the winter.

Discussions will be held with the federal and Yukon governments and the unions to establish new employment projects, adult education programs and other social activities this winter to help maintain the quality of life in the town.



SOURCE: ROBB OGLIVIE (1981)

APPENDIX 6 - EXAMPLES OF ECONOMIC DIVERSIFICATION OPPORTUNITIES
ILLUSTRATIVE LIST OF THE TYPES OF DIVERSIFICATION OPPORTUNITIES
CONSIDERED IN THREE CASE STUDIES

<u>Type of Opportunity</u>	<u>Example</u>	<u>Case 1/ Studies where considered</u>
I. RESOURCE-BASED		
Mining/Milling	- mining new deposits	U A
	- milling for other nearby mines	U A
	- exploration for new prospects	U T A
	- use of mine waste products	T
Tourism and Recreation	- provincial or national park or landmark	U A
	- fishing or hunting promotion	U A
	- tourism promotional program	T A
	- develop and expand campgrounds, parks and recreation facilities and tourist access to the region	T A
Agriculture	- greenhouse production	U A
	- wild rice	U
	- fur farming	U
	- game farming	U
	- cattle production	U
	- peat production	T
Hydro Generation	- generating station	U T
	- transmission system	U

1/ Legend: U = Uranium City, A = Atikokan, T = Thompson.

SOURCE: InterGroup Consulting Economists Ltd. (1982).

<u>Type of Opportunity</u>	<u>Example</u>	<u>Case Studies where considered</u>
Fisheries and Fish Processing	- fishing	U
	- fish processing	U
	- fish farming	T
Forestry	- sawmill operation	T A
	- wood for energy	T A
	- secondary wood products	A

II. GOVERNMENT AND REGIONAL BUSINESS

Federal Government	- mine clean-up and reclamation	U	
	- regional native peoples' centre	U	
	- mine training centre	U	
	- northern training school	U	
	- military activities	U	T
	- correctional institution	U	
	- weather station	U	
	- expand local radio and television production capability		T
Provincial/Local Government	- community college	U	
	- correctional institution	U	
	- industrial park development		A
	- mine training school	U	
	- shopping mall and general purpose building development		A
	- regional high school	U	
	- special health care facilities	U	
	- nurses' training facilities	U	
	- expanding and upgrading roads		T A
	- community improvement program (library, arena, curling rink, airport, municipal campground)		T A A
	- establishing outreach post- secondary education programs		T A

<u>Type of Opportunity</u>	<u>Example</u>	<u>Case Studies where considered</u>	
	- local supply of services to the region, which are presently supplied by offices in a distant metropolitan centre (post-secondary education, court services)	T	A
	- establishing child care centre for emotionally disturbed children	T	
	- re-location of regional government offices		A
Regional Business	- local businesses supply services to the region which are presently supplied by businesses in a distant metropolitan centre (clothing, catalogue sales, food wholesalers, legal services)	T	A
	- regional expansion of local business service area	T	
III. RESIDENTIAL CENTRE			
	- commuter rotation systems	T	A
	- senior citizens home	T	A
IV. FOOTLOOSE INDUSTRIES			
Secondary Manufacturing	- cottage industries, handicrafts, art prints, jewellery, ceramics	U	A
	- tanning and processing	U	
	- textile manufacturing		T
	- furniture and secondary wood products		A
	- outfitters and outdoor recreation supplies		A
Hazardous Waste and Materials Disposal	- radioactive waste facility	U	A
	- industrial waste facility	U	
Power Plant	- thermal power plant		A